

ARMY COMMUNICATOR

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Voice of the Signal Regiment PB 11-10-4 2010 Vol. 35 No. 4

KOREA



Signaleers
provided a
“backbone” for
communications
during the
Korean War
60 years ago

PLUS:

- Trojan Migration Plan update
- CSM Angel Ramos spotlighted



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CHIEF OF SIGNAL

Alan R. Lynn

Apps development indicates waves of changes

Fellow Signaleers,

Students and cadre at the Signal Center of Excellence have written and published nearly 30 applications on the Android Market and iTunes Store in just the past few months. Apps like the "Fort Gordon Post Directory" and the "Signal Corps Handbook for Lieutenants" have already been downloaded thousands of times. Additionally, the Physical Training Program App developed here at the Signal Center of Excellence was one of the award winners during the Army Chief Information Officer /G6's 2010 "Apps For the Army" Application Development Challenge. You can plug into these apps by going to the Android Market or the iTunes Store: <http://www.android.com/market/> or www.apple.com/iTunes.

Our aggressive move into application development supports a larger effort by the U.S. Army Training and Doctrine Command to revolutionize the way Soldiers train. Transforming how we learn and train will fundamentally change how the Army operates. The Signal Center of Excellence is leading the charge.

We have already begun training our Functional Area 53's and some enlisted Soldiers on how to build apps. In early 2011, we will conduct a test that will involve a mobile 3G/4G backbone and a combination of unique apps and military-capable cell phones. We are exploring new ways to procure technology so that we can provide Internet Points of Presence down to the company level. We are making fundamental changes to what we train and how we train. It is very likely that we will combine some MOS's in 2011 and begin developing multi-capable, multi-faceted cyber Soldiers.

These changes will cut across Doctrine, Organization, Training, Materiel, Leader Development and Education, Personnel, and Facilities. In order to better synchronize this campaign, I recently created a new office at the Signal Center of Excellence. That office, the Connecting Soldiers to Digital Applications Division, is headed by a full colonel. The new office bridges the traditional structure at the Signal Center of

Excellence--the Office Chief of Signal, the Directorate of Training, and the Capabilities Development and Integration Directorate. The CSDA Division includes some of our finest FA53 leaders who are experts in app development, officer/NCO education, the cyberspace domain, digital technology and Army operations. Our intent is to grow the division so that it includes NCO's and warrant officers. The division is responsible for delivering end-to-end solutions, designing infrastructure, and creating a digitized environment that blends the operational, institutional, and self-development domains to create a learner centered, career-long learning capability. It is a tall order, but we have the right people to lead the effort.

The greatest strength of the Signal Regiment is our people. Signaleers serve in every type of formation in the Army, in every theater of conflict. We have hundreds of warrant officers, branch-detailed officers, FA53's, and FA24's who served in other branches before coming to the Regiment. We have an exceptionally talented civilian workforce. Our people make us powerful advocates for the Signal Corps' mission, and enable us to support commanders with innovative solutions tempered by practical experience. The Army Operating Concept challenges the Army to "continually adapt to changing conditions," and because of our great people, the

Signal Corps is uniquely postured to meet this challenge. We are a combat tested, all volunteer Signal Regiment that wants to be challenged. Our Regiment is a mix of seasoned Army professionals who have experienced repeated deployments and a generation of incoming recruits who have grown up in a digital world. We have ideas. We have Soldiers and civilians who love what they do, and give willingly of their time and talents to a cause that they believe is greater than themselves.

This is an incredibly exciting time to be a Signal Soldier. Developing apps at the Signal Center of Excellence is new. It is bold. It is moving at the speed of the Internet, and it is just the start.

Pro Patria Vigilans!



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The Directorate of Training offers a virtual universe of educational opportunities for Soldiers and units anytime, anywhere in the world through its online resources. Tap in to its offerings through the LandWarNet eUniversity.



Cover by Billy Cheney

Cover: *The 60th anniversary of the Korean conflict provides an opportunity to recall the vital role filled by Signal Soldiers.*

Professional Soldiering is more than a job

My name is Clark and I'm a Soldier.

Throughout my tenure as a senior noncommissioned officer, I have started and ended every speech with the simple phrase, "My name is Clark and I'm a Soldier," because deep in my gut I have always embraced a sense of pride in the avocation of a professional Soldier.

Recently my battle buddy BG Alan Lynn, U.S. Army Signal Center of Excellence commanding general and Chief of Signal, his wife Brook and I attended a TRADOC senior leaders' course in Kansas City, Missouri. One of the subjects discussed was "The Army Profession of Arms, Its Culture and Ethics." In the session we studied an Army White Paper dated 22 Sept 2010 offering the following definition of a Soldier: "The Army Professional Soldier: An American Professional Soldier is an expert, a volunteer certified in the Army Profession of Arms, bonded with comrades in a shared identity and culture of sacrifice and service to the nation and the Constitution, who adheres to the highest ethical standards and is a steward of the future of the Army profession."

I have read this definition over and over many times since that conference.

The definition includes the word "Professional" and "Profession." I asked myself 'what's different about my profession and the profession of most others?'

I identified two very profound differences--we must be prepared to kill, and we must be prepared to die. In our profession we are called on to make extraordinary sacrifices protecting our most valued national ideals.

Our Army's purpose is to serve the Constitution and the American people. Many times during my 31 year career I have raised my right hand and promised to support and defend the Constitution and the American way of life. Many of you have done the same.

After nine years of war, it's time for all of us to recommit to a culture of service and the responsibilities and behaviors of our profession.

I recall a young sergeant who was

awarded an Army commendation medal for administering first aid and CPR to a fellow Soldier. He saved her life. Afterwards he said "I was just doing my job." In 2003, a command sergeant major in Iraq's chain of command awarded him an ARCOM, a Bronze Star and the Combat Action Badge. Again he told everyone he was just doing his job. I believe he gave an incomplete response.

The Army is more than a job. It's a profession. I am so blessed to work with people who are willing to sacrifice for something larger than themselves.

The next time someone asks you what you do. Proudly tell them "I'm a professional Soldier....an expert, a volunteer, certified in my profession, bonded with my comrades. I serve my nation, and my Constitution. I'm a guardian of freedom and the American way of life." Remember, your profession is not only a condition of the head (expert knowledge) but also a condition of the heart (human expert).

"The Profession of Arms: The Army is an American Profession of Arms, a vocation comprised of experts certified in the ethical application of land combat power, serving under civilian authority, entrusted to defend the Constitution and the rights and interests of the American people."

I'm so very proud of my profession. BG Lynn and I are so extremely proud of our Regiment, and the families who sacrifice right along with us.

In this same conference GEN (Ret.) Gordon Sullivan said, "Without the Army spouses, mothers, fathers and family members, this Army would have collapsed like a deck of cards."

I agree. I would also like to thank our Army families for their sacrifice and their service, to our Regiment and our nation.

"My name is Clark, and I'm an Army-proud professional Soldier!"



Thomas J. Clark



Warrant officers forging the way ahead

Signaleers,

Focusing totally on the past is like running through a forest backwards. To do so is to severely limit your forward progress. The odds are fairly certain that you will run into a tree.

Looking back over the past 150 years that we are completing has been very illuminating in demonstrating just how far we have come. Now we must look ahead. We are entering a year -151- that seems too odd of a number to make a great deal about. Nonetheless, because it is our next year ahead, it is important.

Going back to that metaphorical forest for a moment; if you've ever ran into a tree it's essential that you learn the lesson and remember it. Otherwise you run the risk of repeating the same error again. Looking back helps us maintain the memory and understanding of what worked well and what served to stymie our efforts. In other words, it is essential that we glance back to recall what and where the trees were that we ran into. However, our main focus must remain ahead of us. As any farmer worth his weight in hay will tell you, while it is not inappropriate to glance back to the path you just plowed to ensure your effectiveness, unless you maintain a focus on the field ahead, you will most certainly find your rows crooked and your fields meandering wildly.

Over the last year, we have taken the opportunity to glance over

our shoulders and have learned much about our brilliant history as a corps of professionals. I know that throughout the Regiment you are all doing great work. Some of your accomplishments are truly ground breaking. We now stand on the cusp of our next year and have shifted our focus squarely onto the field yet to be plowed.

Our Regiment's Functional Area Assessment is our 50,000 meter roadmap. BG Alan Lynn, U.S. Army Signal Center of Excellence commanding general and Chief of Signal, has set an azimuth directing the future Regiment. That vision guides the Regiment's experts along a path that requires your support. We need you to help set the waypoints and navigate with purpose towards the milestones that are ahead of us. We need everyone to ensure that we forge the most effective and most efficient way forward. We also need you to be vigilant to capture those 'lesser' points and missions along the way. The FAA is like a broad brush extending over a large canvas.

There are many nooks that will not be directly touched in this effort and the small crevices must not be overlooked.

Since my last note, I

have continued with on-site visits to many outstanding Signaleers across the globe, including those at installations Belvoir, Meade, Eustis, and the White House Communications Agency; and a 1500-mile, eight location whirlwind tour through Europe. With less than a dozen locations left on my comprehensive trip around the Regiment, I am finally getting to the point where I can see myself spending more time on Fort Gordon, bringing to action the things we have discussed in your backyards.

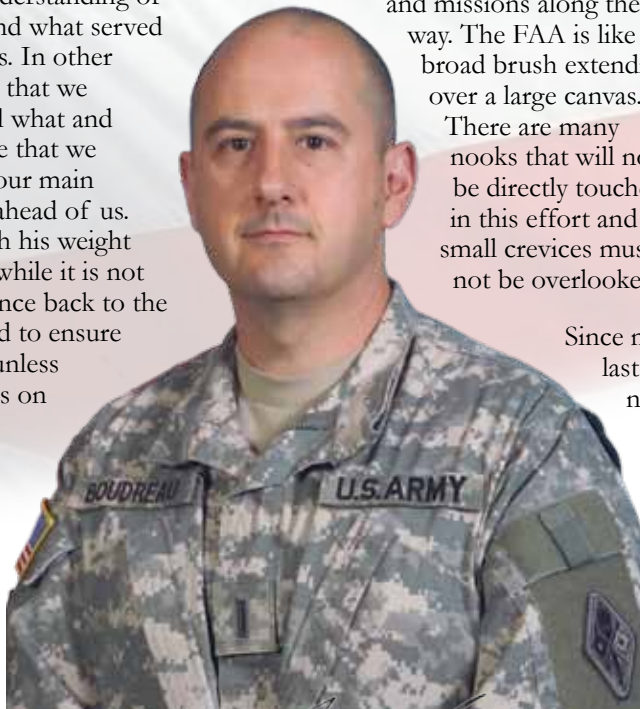
Information is not power; it enables power. That being the case, we are seeking to enable my fellow Signal warrant officers with a warrant officer focused Army Communicator next Spring. We plan to publish articles that address each of the four Signal warrant officer military occupational specialties. We also plan to work with various departments and craft articles on subjects such as the implementation schedule and procedures of our MOCS action, special assignments we are filling such as CIO/G6, G3/5/7, FFID, etc.

The next edition of the Army Communicator will be historic in how it points the way ahead for warrant officers. I solicit your input to make it even more relevant. Please contact me immediately and let's get the word out.

Maybe the 151st year of the Signal Corps is too odd of a number to make a great deal about. But let's make a great deal about it anyway!

Thank you for your dedication and service in being ever watchful for our country.

Pro Patria Vigilans!



A handwritten signature in black ink that reads "Todd M. Boudreau".

Army Communicator



KOREAN CONFLICT 60TH ANNIVERSARY

By LTC Mark Rosenstein

From the beginning of the Korean War on 25 June 1950, the U. S. Army Signal Corps was responsible for providing tactical and strategic communications to commanders throughout the Korean theater of operations.

"Signalmen," as they were known at that time, reconnoit-

tered and surveyed the highest elevations reachable by foot, vehicle and air to develop a functional microwave radio "backbone" that would provide communications to support combat and subsequent armistice operations.

This "backbone" of microwave radio relay sites was constructed in some of the most re-



Radio relay sites located in the southern part of the Korean Peninsula.

remote locations across the Korean Peninsula. One of these sites designated, Salem, was located near Waegwan, Korea. At the time, it was situated in one of the most austere locations. Today, it stands as a legacy to the many "Signalmen" who have supported and who continue to support it, since its establishment in the early 1950's.

Shortly after the armistice establishing a truce between North and South Korea was signed on 27 July 1953, the U. S. Army Signal Corps initiated projects to fortify and establish mountaintop microwave relay radio sites to improve and expand backbone communications from the Demilitarized Zone in the north to United Nations Command and United States Forces Korea elements operating as far south as Chinhae and Busan.

At the time of their construction, most of these remote mountaintop radio relay sites were manned 24 hours a day, seven days a week by signalmen charged with their operations, management and defense. Legendary radio relay sites in the south included: Bucket located near Osan; Highpoint located near Pyongtaek; Richmond located near Taejon; Tacoma located near Kunsan; Salem, Dartboard and Palgongsan all located near Daegu; Brooklyn and Changsan

The Land of the Morning Calm communication backbone



Photo by 1LT Rene Rodriguez

Salem microwave radio relay site as it is in 2010. The tower to the extreme left is a Korean owned tower.

both located near Busan and Bulmosan located near Chinhae.

Most of the radio relay sites began operations during the Korean War. Their primary mission was to provide reliable multi-channel communications across the peninsula through a series of backbone radio relay sites. Radio equipment at most sites included the AN/TRC-24 transportable VHF/UHF-FM radio set, the AN/TRC-29 transportable tactical microwave AM-FM radio set, the AN/TCC-13 used with the AN/TRC-29 to provide 23 channels of telephone communication over a radio relay system, and the AN/TRC-36 transportable radio relay set. Many sites also supported the Armed Forces Korean - Network by operating and maintaining AFK-N radio and television broadcast equipment.

Korean national employees

served proudly by providing technical and logistical operations support to the sites since their establishment. Among other things, Korean nationals helped maintain microwave equipment, helped carry supplies to the most remote radio relay sites and cooked meals for site personnel. Today, Korean national employees are fully integrated into operations and continue filling a vital role maintaining backbone communications across the peninsula. Although most sites are presently unmanned because of technological advancements such as fiber optics, many still exist to support the operational infrastructure.

Since the signing of the armistice, command and control of these legacy backbone radio relay sites has passed through the Eighth Army Long Lines Battalion (1950-1967), USAS-

TRATCOM Long Lines Battalions - North and South (1967-1974), the 36th Signal Battalion - South (1974-present) and the 41st Signal Battalion - North (1974-present). The C2 of each of the radio relay sites has passed between company level units such as the 581st Signal Company, EUSA Long Lines Battalion; Alpha, Bravo and Charlie Signal companies, USASTRATCOM Long Lines Battalion (South); and 293rd and 501ST Signal companies, 36th Signal Battalion (South).

During Ulchi Freedom Guardian 2010, the world's largest command post simulation exercise, the importance of these legacy microwave radio relay sites was highlighted on the front page of the theater's weekly newspaper, the Morning Calm.

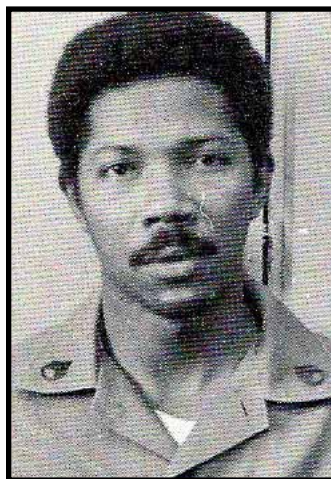
The restoration of the Salem microwave radio relay site was dubbed Operation United Drag-

(Continued on page 6)

(Continued from page 5)

on to signify the united effort of infrastructure and logistical subject matter experts required to restore this vital alternate path communications site. The 36th Signal Battalion, in concert with U.S. Army Garrison-Daegu Directorate of Plans, Training, Mobilization and Security and Department of Public Works, planned, engineered and installed a replacement transformer to re-establish commercial power to Salem after a recent lightning strike had rendered the site's existing transformer non-operational.

To restore communications at Salem, USAG-D DPTMS coordi-



A former Salem Ridge Runner who served on Salem and PALGONG-SAN from 1977-78 (left) is SSG Jasper Sims from a 1977 photo. Today (at right) MSG (Ret) Sims serves with the 36th Signal Battalion assigned in the S-3 section as chief C4IS Plans.



nated with 2nd Combat Aviation Brigade, 2nd Infantry Division for air-mobility support. After successive days and attempts to airlift personnel and equipment were delayed as a result of inclement weather, Operation United Dragon finally came together with the successful sling load of a replacement transformer. The successful restoration of Salem included the replacement of over 150 gallons of fuel, repair of a generator that was manufactured in 1973, the engineering and installation of a new transformer and the restoration of alternate path communications.

Like many other radio relay sites across the peninsula, Salem has a rich lineage with countless Signalmen having proudly served to provide OMD service to the peninsula's legacy backbone microwave relay sites. The 36th Signal Battalion is honored to have a former Salem Ridge Runner assigned who served on Salem and PALGONGSAN from 1977-78. Jasper Sims is currently assigned in the S-3 section as Chief C4IS Plans. He is a veteran of the Vietnam War having served with the 267th Signal Company, 36th Signal Battalion as a lineman.

MSG (Ret) Sims said, "I will never forget my first trip up to Salem when veteran Ridge Runners said it would only take a maximum of an hour and 15 minutes from the base camp. Being young, and only carrying six movie canisters in my backpack, I thought not a problem and off

we went. Two hours later, we reached an area with a small lagoon where we could cool



Salem as it was in 1987.



Photo by MAJ Lan Dalat

Soldiers charge over the rocky terrain to secure the Salem site during Exercise Dragon Shield.

off. From this location, which the veterans called "keyhole," I could finally see Salem. It was a great feeling being told, and thinking, it was only fifteen minutes away although it turned out to be another hour of hiking up the muggy and rocky trail. In total, it took almost three hours to ascend up to Salem.

"After one month of acclimatization, the ascent to Salem took about one hour and 15 minutes. Descending took about 30 minutes where you ended up in the big city of Waegwan. At that time there were no high rise apartments. Daegu, our rest and relaxation area, was another hour and a half away by vehicle. The weather on Salem on any given day was either sunny and hot or cloudy and cold.

"Every Monday, Wednesday and Friday rations and test measuring diagnostic equipment were backpacked to Salem by Korean Service Corps personnel and all technicians assigned to the site. Periodically, we were excited to hear a helicopter coming our way as most pilots at that time went

out of their way to assist us in airlifting items from the base camp to the site. Catching a helicopter ride from Salem all the way to Daegu made us feel like we were very important people who were authorized to fly first class.

"On Salem, we were responsible for maintaining a radio-to-wire integration network via a Vanderbilt radio system; Armed Forces Korea - Network broadcast equipment; as well as providing helicopter pilots with real time weather conditions by maintaining and monitoring weather instruments. Duty on Salem was all about shift work. Our cooks rotated every three days.

"The site noncommissioned officer in charge was the only person that worked five days a week. Our time off Salem was anywhere from three to seven days. And no one complained when they received a few extra days of rest and relaxation."

Today, Salem microwave radio relay site is

(Continued on page 8)



The remote radio relay site at Salem offers Soldiers extreme natural obstacles that make realistically challenging training evolutions.

(Right) 1LT Rene Rodriguez, 36th Signal Battalion assistant S-3, along with other members of the battalion and a Korean National soldier prepares fuel for a “sling-load” operation. Air operations are the only way to bring heavy equipment, fuel and supplies to Salem. **(Below)** A Korean National assists the during a “sling-load” operation at Salem to place a new transformer on site.



(Continued from page 7)

unmanned and houses the traditional microwave antennas and tower with a containerized digital microwave unit that can be monitored and managed remotely from the Theater Network Operations and Security Center - Korea. The 293rd Signal Company located at Camp Carroll in Waegwan provides OMD site management with a dedicated roving maintenance team and support from the 36th Signal Battalion maintenance support team. This team is comprised of Korean National employees who collectively have over 70 years experience supporting the site. The maintenance schedule occasionally requires them to make the two-hour hike up the mountain since there is no road to Salem and the only way to the top is by foot or air.

The 36th Signal Battalion takes advantage of Salem’s challenging terrain and old buildings to conduct semi-annual remote site defense training. Exercise Dragon Shield involves Soldiers from all five battalion units and employs various rotary wing aircraft such as the CH-47 and UH-60 to rapidly deploy security and maintenance personnel from garrison locations to remote mountaintop radio relay sites supporting the Theater Defense Communications System infrastructure located throughout the battalion’s 38,250 square mile area of responsibility.

This article is dedicated to all “Signaleers” who faithfully served on Salem and other radio relay sites spread across Korea since the start of the Korean War on 25 June 1950. Their contributions to peace on the peninsula will never be forgotten.

For more information on 1st Signal Brigade visit: <http://8tharmy.korea.army.mil/1sig/>.

LTC Mark Rosenstein joined the U.S. Army Signal Corps after serving as a field artillery offi-



The 36th Signal Battalion takes advantage of the Salem microwave radio relay site in Korea during Exercise Dragon Shield. PFC Michael Clark, 169th Signal Company, provides security on Salem's landing zone as a CH-47, Chinook, prepares for lift-off. Air coordination and pyrotechnic resources are planned and unit-level training is conducted during Sergeant's Time Training and during other collective training events. Training focuses on troop leading procedures, site and building clearing, site defense, first aid and site restoral.

cer. Over his career he has held a variety of leadership and staff assignments including: Corps and Division G-6 Plans, Brigade S-3, Battalion Executive Officer, Group S-3 and Company Commander among others. He has deployed to Iraq three times, twice with V Corps and the 22nd Signal Brigade for Operation Iraqi Freedom and once in support of the NATO Training Mission - Iraq as an Advisor/Mentor. He also deployed to Haiti with the 10th Signal Battalion, 10th Mountain Division for Operation Uphold Democracy. He is currently serving as Commander, 36th Signal Battalion, 1st Signal Brigade, Camp Walker, Korea. 🇺🇸

ACRONYM QuickScan

AFKN - Armed Forces Korean Network
C2 - Command and Control
CAB - Combat Aviation Brigade
DCS - Defense Communications System
DMU - Digital Microwave Unit
DMZ - Demilitarized Zone
DPTMS - Directorate of Plans, Training, Mobilization and Security
DPW - Department of Public Works
EUSA - Eighth U.S. Army
KTO - Korean Theater of Operations
MST - Maintenance Support Team

OMD - Operations, Management and Defense
RMT - Roving Maintenance Team
RWI - Radio-to-Wire Integration
TCF - Technical Control Facilities
TNOSC - Theater Network Operations and Security Center
UFG - Ulchi Freedom Guardian
UNC - United Nations Command
USAG-D - U.S. Army Garrison-Daegu
USASTRATCOM - U.S. Army Strategic Command
USFK - U.S. Forces Korea
VHF - Very High Frequency

CSM Angel Ramos builds successful career by finding good role models

SPC Terysa M. Shaffer

Before he finished high school CSM Angel J. Ramos knew he wanted a career serving his country. "My two older brothers served in the Marine Corps, and I wanted to serve," said the 35th Signal Brigade command sergeant major.

"I actually committed at the end of my junior year of high school when I joined the delayed entry program. I knew if I stayed around Reading [Pa.] there wasn't much going on and I wanted to make something of myself. I was ready to move out and explore the world so to say," said Ramos.

On any given day, one can easily hear CSM Ramos' booming voice echoing down the corridor of the third floor in the 35th Signal Brigade building on Fort Gordon, Ga.

CSM Ramos, who has been in the Army for 24 years, has earned the reputation of being a "by-the-book" leader because he insists on exceptional attention to details, yet his continuous quest for excellence and passion for mentoring young Soldiers has helped him climb the ranks to the position he holds today.

He says he chose the Signal Corps because he was always interested in the communications field. He opted for the Cable Dawg, 36C, Wire System Installer, military occupational specialty. "I went on to get all the qualifications of a Cable Dawg and learned quickly that we were some of the most motivated Soldiers in the Army. We were always tight and looked out for one another. I've loved being a 'Tower Dawg'. It is the best job ever." Ramos was inspired to leadership by being around highly motivated Soldiers.

"I've always been a go getter. So once I learned what the Army was about, I went for it." He says his career successes were built on finding good role models and then working to do everything they did better. "I enjoyed

"I'm a firm believer that you must be able to live in the shoes of your Soldiers before you expect them to carry something out. In other words, the Drill Sergeant Creed says it best: 'I will lead by example, never requiring a Soldier to attempt any task that I myself would not do.'"

outdoing my leadership in everything possible. I wanted to show them that I had what it took to be a leader."

In order to become a leader, CSM Ramos knew that he had to stand out from his peers and be one of the best Soldiers around. "I was once told that if I didn't like something, then move up and change it, but until then, I was to execute even though it was wrong or didn't make sense. It didn't take me long to move up and start making a difference."

With distinction and honors he completed training such as the Basic-Noncommissioned Officers Course, Advance Noncommissioned Officers Course, First Sergeant Course and Drill Sergeant School. He was named NCO of the Year (1991, 1994), Drill Sergeant of the Year (1996), and was inducted into the Sergeant Morales Club (1993) and the Sergeant Audie Murphy Club (2000).

He said it was his motivation to be an outstanding NCO that drove him to the upper levels of leadership. Ramos also points to another key attribute that helped him succeed. "I paid attention. I listened and executed my duties to the best of my abilities. I lived the NCO Creed each and every day. It meant the world to me. I've always strived for excellence--maxed my APFT, shot expert, attended every board possible and graduated with honors from just about every school I attended."

With several tours of duty, leadership schools and awards to his credit, Ramos acknowledges that all of these accomplishments were preparatory to his most important and challenging role as a leader: mentoring Soldiers. His motivation for the welfare of Soldiers came from his early years in the Army. "I must say that I didn't always have some of the best mentors coming up, but I learned quickly what good leadership was and what Soldiers need. I have been blessed to lead this nation's most precious resource, our sons and daughters, our Warriors. Not a day goes by that I take it for granted."

CSM Ramos' enthusiasm for helping Soldiers can be seen from every angle, from young Soldiers, to seasoned officers.

COL Marc D. Harris, 35th Sig. Bde. commander, said he observed his battle buddy's superior attention to detail a long time ago. "He's really an embodiment of Army values," said Harris, who describes Ramos as being an extremely technically competent NCO with superior understanding of his job field.

SGT Ricardo L. Anaya, a former 35th Sig. Bde. command group driver, said that his Army career was greatly influenced by CSM Ramos. Anaya said from the very first interaction he knew "Ramos was a real sharp and squared away sergeant major. I could tell that he's been in every situation

imaginable, from a young NCO to a high ranking sergeant major." SGT Anaya said he gained from CSM Ramos guidance and the proper tools to become an NCO.

SSG Kenneth B. Tucker, a 35th Sig. Bde. Command group driver, said that Ramos was intimidating at first, but he has a very strong command presence and a welcoming attitude. He recalls when the brigade deployed to Operation Iraqi Freedom 10-12, Ramos gave a small speech to all the NCOs. "He gave us a speech that would set our direction for the entire deployment. His choice words instilled purpose to our mission. Like a coach on Sunday, he fired us up and then sent us into the field," said SSG Tucker.

Those around CSM Ramos notice his knowledge on Army standards, and his quickness to correct things that others normally don't notice. "Nothing gets by him," said COL Harris. He notes CSM Ramos' drive to make things right, and that he doesn't hesitate to step in to mentor or educate Soldiers and noncommissioned officers. "It's always good to have one that lives the values and who is extremely competent.

"When it comes to Army knowledge, there is literally no one that can compare to what he portrays as a leader. I had the privilege to work alongside a command sergeant major who really showed me a side of the Army that I never knew. It was interesting to me to finally understand where all organizational standards came from. CSM Ramos strictly adheres to Army standards when it comes to his brigade's operation and appearance," said SGT Anaya.

With CSM Ramos' help, SSG Tucker said he has a better understanding of the role of a NCO. "His attention to detail and standard of perfection obviously shows within him and his area of operation," said SSG Tucker.

CSM Ramos' coaching of SGT Anaya and SSG Tucker ties back to his main mission in the Army. "My sole purpose is to lead and mentor these Soldiers to become the Army's future noncommissioned officers," said CSM Ramos.

From being a squad leader, section sergeant, platoon sergeant, first sergeant, sergeant major and com-



Photo by COL Marc D. Harris

CSM Angel J. Ramos, 35th Signal Brigade command sergeant major, looks out the window to enjoy the view while flying on a Black Hawk helicopter to visit the supporting battalions of Task Force Lion at their perspective forward operating bases scattered throughout Iraq.

mand sergeant major, CSM Ramos always promoted professionalism throughout his Army career. "I've always had a saying coming up 'professionalism by example.' By exhibiting this quality, others quickly noticed what could be accomplished or achieved. I'm a firm believer that you must be able to live in the shoes of your Soldiers before you expect them to carry something out. In other words, the Drill Sergeant Creed says

it best: 'I will lead by example, never requiring a Soldier to attempt any task that I myself would not do.'

By leading by example, many Soldiers and NCOs see the standard that CSM Ramos puts out and try to imitate it. "In my future Army career I will always put forth 100 percent as a leader. I have always looked up to CSM Ramos as a role model in whom

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I would like to myself reflect one day, and I understand to do this I really need to step up my abilities as a father and a leader in everything I do," said SGT Anaya.

CSM Ramos makes sure to emphasize professionalism in his leadership as well as his career. "As non-commissioned officers, everyone looks at you, they are sizing you up and determining if you have what it takes to lead. If you have it and don't share it with others, then it's for nothing. I on the other hand try to reach out to all that I can so they too can become solid leaders who are capable of leading and taking care of their Soldiers and families," said CSM Ramos.

CSM Ramos' leadership style stems from the few NCOs that he says had an impact on his career. "1SG Eddie Bell without a doubt had the biggest impact on me. He was an old school first sergeant who did not play. As one of his platoon sergeants, he stayed on me and ensured that I knew what being an NCO was all about. He was a tremendous leader and now a very good friend of mine. CSM Kenneth Williams, who I've known for a very long time has been one of my mentors. He was always calm



Photo by SGT Ricardo L. Anaya

CSM Angel J. Ramos, 35th Signal Brigade command sergeant major, presents a coin to a Soldier of the 72nd Expeditionary Signal Battalion for his outstanding efforts in Kirkuk, Iraq. CSM Ramos, along with COL Marc D. Harris, 35th Signal Brigade commander, made many visits to different forward operating bases in Iraq to provide close support to Soldiers.

and never seemed to get excited, but yet his message was very clear. He always made it a point to advise and guide me. CSM Michael Terry just didn't give up on me. Even though at times I felt he didn't care, he always did. It just took me awhile to figure

out what he was trying to teach me," said CSM Ramos.

CSM Ramos said these leaders, along with other NCOs took the time to mentor him and make him who he is today. And now as the command sergeant major of the 35th Sig. Bde., CSM Ramos still enforces the Army standards unequivocally. He says he will continue counseling, mentoring and coaching Soldiers.

With over 20 awards, three deployments and bachelors and masters degrees --both magna cum laude, CSM Ramos is most proud of having the honor to lead America's sons and daughters. "I have had this honor as a platoon sergeant, first sergeant, battalion command sergeant major and brigade command sergeant major. It doesn't get any better than that!"



Photo by SPC Terysa M. Shaffer

Participants of the Task Force Lion Noncommissioned Officer and Soldier of the Year competition take off during the two mile run event of the Army Physical Fitness Test in Baghdad, Iraq. The command teams of the 35th Signal Brigade and 67th Expeditionary Signal Battalion used the APFT to raise the morale of the Soldiers during the event.

SPC Terysa M. Shaffer was born in Subic Bay, Philippines at the U.S. Naval Hospital on October 4, 1985. After attaining her Bachelor Degree in English, emphasis in Journalism, she entered the U.S. Army in September of 2008 and completed Basic Training at Fort Jackson, South Carolina and Advanced Individual Training at Fort Meade, Maryland. She is currently working as a Public Affairs Specialist with the 35th Signal Brigade out of Fort Gordon, Georgia. 🇺🇸

Science fiction approaches reality

First warrant officer cyber defense experts complete training program

By CW5 Todd M. Boudreau

The Army has taken a bold step toward protecting an expansive and continually threatened frontier by graduating its first class of cyber defense experts.

The gap between science fiction and current cyber space operations has become much smaller. For example, the Star Trek communicator is realized in today's mobile smart phones; flip-top and all. The Star Trek universal translator has also been realized in the U.S. Army's TRANSTAC (Spoken Language Communication and Translation System for Tactical Use); though it only focuses on common Iraqi Arabic - English translation.

The Star Trek electronic clipboards used by LT Uhura are closely proximate in such devices as the iPad. Even the Star Trek holodeck, a simulated reality room used to recreate objects and people, is becoming a reality in agencies such as the Joint Training Counter-IED Operations Integration Center where researchers are working on virtual reality rooms.

However, reality does not follow the script where all of the high tech devices assure the good-guys succeed. In real life, adversarial attacks remain unpredictable and unwilling to ensure we maintain the upper hand in cyberspace. Our adversaries continuously demonstrate that they intend to degrade, disrupt, deny and destroy the advantages our Armed Forces have through the use of high technology systems. In real life, cyber attacks result in any one or more of a variety of threats to include: (1) denial of service attacks, (2) communications networks penetration, (3) manipulation to communications networks routing, (4) information exploitation, and, maybe the most dangerous, (5) information manipulation.

As the Department of Defense continues to adjust its policies and procedures to shape the future cyberspace environment and combat these threats, the Army continues to adjust its doctrine, organizations, and personnel to meet its capability requirements.

On 29 October 2010 the U.S. Army Signal Center of Excellence and Fort Gordon graduated the first class of warrant officer cyber defense experts. Each graduate was reclassified to Military Occupational Specialty 255S to ensure the Army's ability to: (1) track these highly trained experts, (2) prevent the loss of their highly perishable skills, (3) provide an enduring cradle-to-grave career path, and (4) meet doctrinal/organizational positional requirements.

This first class of cyber experts is unique in that several will remain at Fort Gordon and continue working


toward the requirements to be SANS Institute instructor qualified. The SIGCoE considers this necessary to allow the Army to conduct its own training, yet leverage the educational and training power of SANS Institute, a leading organization in computer security training.

Other graduates will go on to work in support of U. S. Cyber Command, Army Cyber Command, Forces Command, Army Theater Network Operations Centers, and Theater Computer Emergency Response Teams. Misinformation has caused some to believe that MOS 255S will address Information Assurance compliance issues.

This is totally inaccurate. MOS 255S will create the first focused capability to hunt for plausible threat vectors and evidence of adversarial activity in our networks. These Soldiers will coordinate with the Intelligence Community to gain the most up-to-date classified adversarial tactics, techniques, and procedures and to coordinate for appropriate level Computer Network Defense Response Actions. The Army has invested quite a lot in the 255S training, and thus will endeavor to ensure they are situated and focused on that which will get us the greatest return.

MOS 255S applicants must have demonstrated cyberspace operations proficiency as a senior W2 from the Signal Regiment's two other warrant officer MOSs; meaning the nominal applicant has 10-12 years enlisted experience and another 5-7 years experience as a warrant officer. Due to the classification of much of the instruction, applicants must also hold a valid Top Secret security clearance. The applicant must also have a demonstrated aptitude for the training by successfully passing the Certified Information Systems Security Professional certification exam (an industry led global standard demonstrating an understanding of security domains) and the Global Information Assurance Certification Security Essentials Certification exam (a SANS Institute hands-on training/certification that is more practically oriented) prior to selection.

Two classes are scheduled for 2011 and a third class in calendar year 2012. These classes are pilot courses and will train up to a total of 20 warrant officers each consisting of Active Army, National Guard, and Army Reserve students. Formal classes begin on or about 1 October 2012. It is currently estimated that all three components (USA, ARNG, USAR) will grow over 100 255S each. As it will take time to grow to these numbers, the Signal Regiment is developing a strategy to assign these cyber defense specialists to the right units at the right time.

CW5 Todd M. Boudreau is the U.S. Army Signal Regimental Chief Warrant Officer. 

WIN-T/JTRS Migration

By Scott Long

This article serves as a progress report as well as a tribute to the many talented professionals who have collectively worked to overcome some very complex issues in the initiative to transition the military intelligence community out of the communications business through migration of the communications functionalities of Trojan Spirit systems to WIN-T.

Included among those who have labored to make the present progress possible are representatives from the U.S. Army Signal Center of Excellence; the U.S. Army Intelligence Center of Excellence and their acquisition partners; program executive officers from Intelligence, Electronic Warfare and Sensors; and Command, Control, Communications, and Computers-Tactical.

Excellent leadership coupled with determination and dedication of all the participating partners, has set the stage for some very beneficial network enhancements to the operational Army, along with some potential cost savings that could come with a more converged network.

While we have not reached the end point, everything is lining up for success.

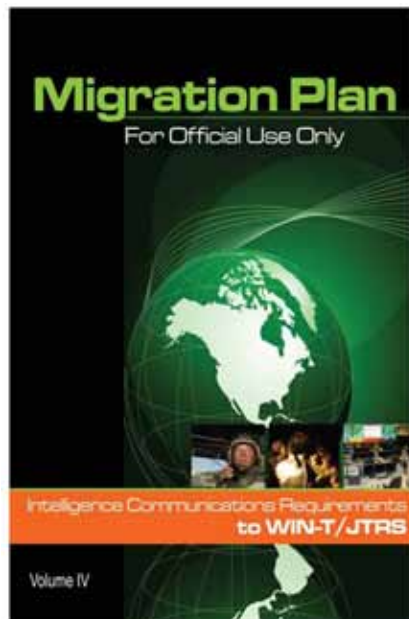
Converging networks is not easy. If it were, all of the mission specific systems developed by other Army proponents such as CSS, ADA, and the medical community, would be moving in a similar direction.

In fact, TRADOC and ARCIC have directed the Signal Center of Excellence to develop and lead a Network Convergence Plan that addresses these other mission specific systems in ways that are financially and operationally beneficial for the Army.

Background

Mission specific systems and supporting networks have been resourced and developed for many years for a variety of valid reasons. In the case of MI, this situation goes back to the 1980's when Mobile Subscriber Equipment was being developed and resourced.

It was determined that it was not cost effective to address TS/SCI requirements in the MSE program as the Army moved forward to field MSE Army-wide as a Battle Command focused and secret-high system. This decision to go with a secret-



high network set the stage for an agreement at HQDA between the ODISC4 and the G-2 that eventually resourced HQ CECOM and HQ INSCOM to develop the TS systems to meet operational TS/SCI requirements at echelons division and above.

It should be noted that the initial TROJAN communications systems were built as part of TROJAN Classic to meet training requirements for linguists in garrison locations around the world. However, beginning with first Gulf War in 1990-1991, the TS system was deployed to help meet TS/SCI requirements operational at corps and above.

These initial 13 TS systems were so successful that requirements grew to 38 systems by 1998. This highly successful and highly capable TS system, along with the elaborate supporting TROJAN infrastructure funded by the Army G-2 and HQ INSCOM, has not come cheaply. MI Soldiers, typically full time analysts, continue training to do TS/SCI communications transport functions. Additionally, requirements and supporting resources have grown from 38 TS systems to more than 200 systems that provide TS/SCI support down to the BCT level.

As TS/SCI requirements continue growing, and as funding is shrinking for the entire Army ISR portfolio, it is even more important for the Army G-2 to disengage itself from the business of paying for communications. This emphasizes that there are three elements necessary in the implementation of network convergence. First, there must be a user that wants to get out of the communications business. Second, there must be an Army network provider that wants to expand its capabilities to meet user requirements beyond Battle Command. Third, there must be an Army staff and senior leadership motivated and determined to achieve and mutually agreeable network convergence. In the case of this migration effort, all three elements are in place.

Plan Purpose and Approval Process

The plan is the only HQ TRADOC approved Migration Plan of its kind. It continues to serve as the single, unified plan for the articulation of MI concepts and communications requirements, and the eventual transfer of responsibility for these requirements to the Army's WIN-T and JTRS capa-

bilities. The plan is updated every three years in order to stay aligned with the Office of the Secretary of Defense, Joint, Headquarters, Department of the Army guidance, Land Warfare Network concept of operations and changes in Distributed Common Ground System-Army communications requirements, lessons learned and Future Force concepts.

The plan, as in past editions, is a venue to press for change. From a network perspective, the plan documents where we are, where we are going, and what we're doing to get there. We use the validated requirements in this plan to make adjustments to our supporting TS, WIN-T, and JTRS programs. This process allows us to keep pace with user requirements while being mindful of fiscal realities.

The Migration Plan took about 18 months to deliver. Like the three previous plans, organization, teamwork, and colonel-level oversight were the key for final plan approval. A council of colonels, composed of 20 members from TRADOC, HQDA, and stakeholders in the acquisition community, met on three occasions to review and shape the plan. The plan was signed by MG John Custer, ICOE commander, and BG Jeffrey Foley, SIGCOE commander, on 18 Nov 2008. On 23 March 2010, LTG Michael Vane, ARCIC director, provided his endorsement of the plan and sent it on to the director of Army G3/5/7 LandWarNet Battle Command Decision Forum "for tracking and resourcing as a priority item."

The Importance of Validating User Requirements

In order to make sure that the plan focused on "user requirements," the ICOE set up a working group and launched a 15-month journey to lay out the best and most comprehensive lay-down of Intelligence Warfighting Functional Area information exchange requirements ever submitted to the SIGCOE. This was the lynchpin in the plan to help the TRADOC Capability Manager for Networks and Services and the PM WIN-T understand the validated user requirements for both current and future force.

The IWFA communications requirements data supporting this plan were derived from integrated net-centric intelligence operational architectures supporting intelligence center capabilities documents for programs such as DCGS-A, Prophet, ACS, CHARCS, Biometrics, and Language Translation. It also used information from the Army G-2 ISR baseline architecture and theater of operations lessons learned. The supporting intelligence architecture operational view products capture the operational nodes, the tasks or activities performed, and the information that must be produced and consumed to accomplish intelligence warfighting missions from nodes at the Theater Brigade level down to CI and HUMINT Teams.

The analysis process will continue to mature the information exchanges supporting the IWFA

communications requirements analysis and will inform the DoD Architecture System and the Army Architecture Repository and Management System, TRADOC Architecture Integration and Management Directorate for inclusion in the information exchange database after completing the Army Intelligence Center Proponent and Council of Colonels validation process.

After loading the IER information into the AIMD data base, the Experimentation Division of the Capabilities Development and Integration Directorate, SIGCOE converted the data in order to support the modeling and simulation tools used by PM WIN-T. WIN-T uses modeling and simulation to provide a disciplined approach to developing a level of understanding of the interaction of the various parts of the WIN-T network and the performance of the WIN-T network as a whole. The level of understanding, which may be developed through this discipline, is seldom achievable by any other means. Systems engineers use the results of modeling and simulation to help drive network design decisions.

Experimentation Support

Based on General Officer directives coming out of the 2005 Migration Plan, the SIGCOE Center's Experimentation Division, in coordination with TRADOC's Chief of Studies and Analysis and ICOE CDID participants, conducted a live network TS/SCI experiment at Ft Gordon. The experiment was designed to evaluate the technical feasibility of providing JWICS and/or NSA Net connectivity for TSCIFs located at the BCT Main CP, TAC CP, and the RSTA Squadron using the existing Network Service Center-Training and Joint Network Node and the Battalion Command Post Node capabilities.

It should be noted that back in the 2005-2006 timeframe, the Signal Regiment successfully fielded TS/SCI capabilities to the BCT and battalion level in Operation Iraqi Freedom as part of the Joint Intelligence Operations Center - Iraq initiative. However, 2007 experiment was necessary to prove that the JNN network could handle future force IFWA communications requirements identified by the ICOE. These requirements far exceeded those in OIF, particularly in the area of future force DCGS-A BCT information exchanges. The goal was to work shoulder to shoulder and identify any technical capability shortfalls in JNN using "measured" network traffic loads and profiles from operational Trojan SPIRIT and JNN networks as well as the IERs and Critical Operations Issues Criteria provided by the ICOE.

In November of 2007, the Director of the Experimentation Division reported that the experiment demonstrated that the JNN Network, with minor configuration changes, had the capability and scalability to support the additional TS/SCI

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traffic requirements for both current and future forces as defined by the Intelligence Center's COIC. Based on the operational assessment of the Intelligence Gateway-Configured Joint Network Node at the BCT Main and TAC CP, as well as the CPN at the RSTA BN, it was determined that there is low technical risk to place the TS/SCI traffic requirements identified by the Intelligence Center onto the JNN Network currently fielded to the BCT.

The Experimentation Final Report was sent to ARCIC under the signatures of BG Foley and MG Custer with recommendations to complete the programmed fielding of TS systems to the BCT formations to help ensure current TS/SCI requirements for the BCT Commanders are met while we begin moving towards a common transport WIN-T transport architecture with tunneling packages called Intelligence Gateways (IG). Also, to plan and resource the IGs and the TNCC provided network services to enable the BCT Main, TAC CP, and RSTA Squadrons to begin operating TS/SCI over WIN-T as soon as possible. Lastly, for the G-8 to account for IG requirements in the Combat Aviation Brigades, Fires Brigades, and BfSBs even though those unit requirements were not formally assessed in the experiment. MG Fast at ARCIC supported these recommendations and sent the report forward with her full endorsement on 10 Dec 2007.

Current Agreements, Explanations, and Updated Status

The remainder of this article will be devoted to a fairly detailed summary of the 2008 Migration Plan agreements as well as an update of activities associated with each of the agreements. Many of these agreements were years in the making as we worked through one major issue after another to ensure a coordinated way ahead.

Agreement #1: No more Trojan SPIRIT Version 2 or 3 Systems will be resourced by the Army Staff once the fielding to Brigade Combat Teams is completed. In other words, the Signal Regiment is now responsible for "have not" units, e.g., those Brigade level and lower units who have TS/SCI network requirements, but who are not programmed to get a TS LITE.

Discussion: This agreement was made in coordination with G-8 (FDC and FDI) and Army G3/5/7 in order to draw a "line in the sand" and move toward a WIN-T provided transport capability for all TS/SCI users. The Council of Colonels and General Officers all felt that it was operationally prudent to complete the fielding plan for TS LITE V3 systems to each BCT. Everyone also felt that based on JIOC-I successes with tunneling packages and JNN transport, as well as the 2007 Experiment, PM WIN-T provided TS/SCI solutions and WIN-T Increment I transport were more than adequate to meet any new TS/SCI requirements at the Brigade level and lower if and when approved by the Army G3/5/7.

This decision was supported by a corporate decision made by the Army G3/5/7 (DAMO-FMO) on 24 Aug 07. In a memo back to the CG, US Army CAC, Fort Leavenworth, Subject: Requirement Determination for Trojan SPIRIT Systems in the Aviation Brigade, Fires Brigade, and the Battlefield Surveillance Brigade (BfSB). The G-3/FM acknowledged a requirement for TS/SCI for Fires Brigades, Combat Aviation Brigades, and the BfSB.

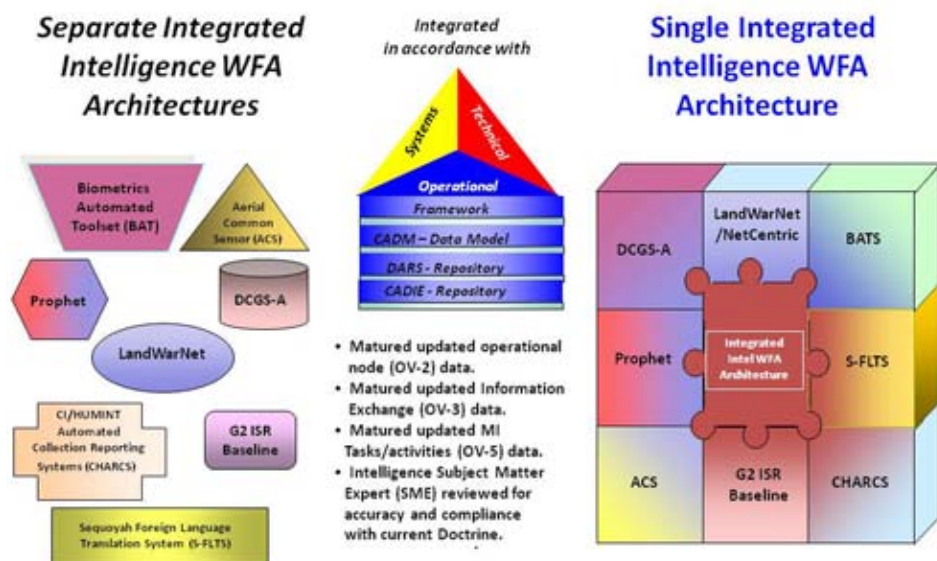
However, the TRADOC request to add these units to the Trojan SPIRIT basis of issue "is returned without action because there are other alternatives to provide this capability to each organization. An objective material solution for TS/SCI in Aviation Brigades and Fires Brigades will be to use tunneling of TS/SCI through the WIN-T Increment 1, which has been successfully demonstrated in theater." This decision was heavily influenced by the feedback that the Army Staff was receiving from the TS/SCI Experimentation at the SIGCOE, as well as reports back from OIF on the successes of Signal-provided TS/SCI for JIOC-I. The memo did authorize one Trojan SPIRIT per BfSB HQs (against a requirement for two), but stated that any additional requirements would be reviewed against the WIN-T material solution.

In September 2009, the Army G8 FDC made a decision to fund three TS/SCI tunneling packages for the Experimentation Division of CDID, SIGCOE. These IGs were shipped to the Experimentation Division by PM CHS, in coordination with PM WIN-T Increment 1. These IG's were used for further experimentation in October 2009 and again in January 2010 to test the WIN-T Increment 1 network using live TS/SCI traffic. With support from the 513th MI Brigade (TSCIF and the "tactical users"), the 442nd Signal Battalion (JNN equipment and operators), FORSCOM G6 (SATCOM air time), the Network Service Center for Training at Fort Gordon (technical expertise and Tactical Hub support), and the Trojan TNCC (IP addresses, Crypto Key, NETOPS support), the experiments picked up where the 2007 Experiment left off.

The intent of the "live" TS/SCI testing was to conduct a Phase II validation of the July 2007 event, which used simulated BCT information exchanges to prove that the TS/SCI tunneling package over WIN-T/JNN was a low risk. While not an easy experiment, the team assembled to conduct these live experiments successfully provided both JWICS and NSA Net connectivity to the MI users over WIN-T Increment 1 transport through the NSC-T and the TNCC. The operators at the 513th MI Brigade stated that they had more than adequate quality of service as they pushed and pulled information across the network using DCGS-A applications connected



Integration of multiple Intelligence Warfighting Functional Area (WFA) Architectures



The systems architecture of the experiment.

to the DIB, including MASINT, IMINT, and SIGINT products. A systems architecture of the experiment appears at the top of the next page.

In December 2010, the 101st CAB submitted an ONS requesting a TS LITE to meet their TS/SCI requirement for an upcoming operational deployment. The Army G3/5/7 returned the request without action in favor of a tunneling package and the organic JNN/CPN SATCOM transport provided by the organic Signal Company in the CAB. In March 2010, following the live TS/SCI experimentations at Fort Gordon, an IG was shipped to Fort Monmouth for inspection, configuration, and shipment downrange to the 101st CAB. In anticipation of the shipment, the 101st CAB S2 and S6 had to work together to build a TSCIF, complete the accreditation package, and get approval to operate by INSCOM G6 before the issue of TS/SCI IP addresses. This work has been completed at the time this article was submitted and the CAB was in the process of having the IG installation done with the help of field ser-

vice representatives funded by HQ INSCOM.

When the Army G3/5/7 responded to the 101st ONS in Feb 2010, the chief of the Current and Future Warfighting Capabilities Division reiterated the need for a Detailed Technical Procedures (DTP) assessment and plan with the steps necessary to connect TS/SCI networks to JNN and provide signal transport to the supporting network control center. This DTP guide was sponsored by the Experimentation Division at CDID SIGCOE and was developed with assistance from PM WIN-T Increment 1, CERDEC I2WD, HQ INSCOM and TROJAN Network Control Center subject matter experts. That DTP (Draft 1.0) was sent to PM WIN-T, PM RITE, and HQ INSCOM in time to assist with the 101st CAB fielding. The DTP continues to be used to inform the development of the WIN-T STRAP for Increment 3 and will be adjusted over time.

In the Summer of 2010, as part of the Army G-2's Relevant Intelligence to the Edge initiative, additional requirements for TS/SCI to the maneuver

battalion level were approved by the Army G3/5/7. These requirements will be met with PM WIN-T provided tunneling packages to be used over Signal provided transport being fielded and coordinated by PEO C3T and CENTCOM J6. These TP's are the precursor to the WIN-T Incr 3 provided Modular Communications Nodes-Top Secret, the permanent WIN-T POR material solution for TS/SCI users. The MCN-TS will be discussed later.

Agreement # 2: Migration of TS LITE systems to WIN-T will begin in Increment 3 of WIN-T (circa 2015-16). However, there will be no replacement of TS LITE systems until WIN-T has been determined as a suitable replacement by Army Staff.

Discussion: The existing TS systems in the Army today, from TIB down to BCT level, will eventually be replaced with Signal provided tunneling packages called MCN-TS along with transport and NETOPS functionality that come with WIN-T Increment 3 in the 15-16 timeframe. One of the key agreements as the Army gets closer to this replacement effort is that communications support provided by Signal must be good enough to provide capabilities required in order to conduct intelligence operations.

The Army staff will be the deciding vote on when the replacement of Trojan SPIRIT occurs. Army leaders will continue looking at the ongoing TS/SCI capabilities being provided now and over the next year or so by PM WIN-T Increment 1 and PEO C3T. As we measure the effectiveness of the tunneling packages that will be riding WIN-T/JNN transport in the CAB and Fires Brigades, as well as the battalions "downrange," adjustments will be made and improvements evaluated. TTP's will be developed and refined. Risk will continue to be reduced through equipment adjustment as well as effective training on troubleshooting and teamwork

(Continued on page 18)

that is required between the Brigade/Battalion S2, S6, and supporting network managers.

Army leaders want this Migration Plan to succeed. There are some real potential cost savings to be gained by the migration of TS to WIN-T. The key to these savings is for the PEO C3T to deliver a TS/SCI capability to the MI users that allows the successful conduct of intelligence operations. No one wants an unhappy customer. No one wants DCGS-A to fail at the TS/SCI level because of a lack of network support. But one thing everyone needs to keep in mind. There is only so much bandwidth for a deployed force. Physics cannot be altered in terms of available SATCOM. That is why Army leaders and PEO C3T are working so hard to develop a robust network extension aerial layer to go along with the SATCOM and terrestrial layer of communications support.

At some point, this all may lead to the BCT commander making hard decisions on who gets what bandwidth at a given time. The S6 will execute the Commander's intent using NETOPS tools that are being developed by the Army as part of LANDWARNET.

Agreement # 3: The Trojan program will not be a "bill-payer" for Signal manpower as Trojan SPIRITs are replaced by WIN-T. However, MI soldiers will help install, operate, and maintain the tunneling packages with assistance from the S6 and G6.

Discussion: This has been a delicate topic. It has literally taken years to get past the emotional discussions and heated disagreements that played out as part of the earlier Migration plans with regards to personnel and "bill-payers". The Army staff Council of Colonels members involved in the staff coordination of this plan were quite clear on the matter of personnel. The fact is that when each TS system goes away, so do the operators. The SIGCOE and the ICOE agree that the ICOE capability developers should submit a Force Design Update calling for additional MI force structure that accounts for the potential loss of these soldiers that go away along with the TS systems. The Army bill, if the FDU is approved, could be paid from those soldiers.

So to reiterate, the current plan is for the ICOE to submit an FDU so that these three MI 35 series MOS soldiers remain MI in order to continue supporting DCGS-A functions at the Battalion, Brigade and Division levels that have been identified as part of the MI rebalance initiative.

While the SIGCOE continues to advocate an increase in Signal force structure as part of the ongoing Functional Area Analysis process, there is no new force structure required to make this Migration Plan a reality. However, the SIGCOE will require adjustments to the STRAPs for WIN-T Increment 1, 2, and eventually 3 as PM WIN-T provided tunneling packages are fielded to the force. The DTP discussed above serves as a good start point

to adjust the STRAPs. The STRAPs must cover not only the training requirements for the SIGCOE, but the ICOE as well as we move beyond FSR's to NET Teams to Schoolhouse training.

The current strategy is for the WIN-T provided tunneling packages to be added to the BCT's MI Company S2 Section. From a network management perspective, the demarcation point between Signal and MI responsibilities in the BCT or Support Brigade is the Cipher Text input of the IG Cryptographic Controlled Item. Signal personnel are responsible for getting the signal to that point. Additional bandwidth must be allocated to account for the TS/SCI user requirements as part of the overall Command and Control network.

The amount of additional bandwidth must be determined by the S2, the S6, and the S3 operations staff in order to meet the Commander's intent. Practically speaking, no single bandwidth figure can be set for all situations. Thus, a combined effort between the Brigade staff will be required to provide adequate quality of service for TS/SCI uses if and when requirements increase. Suggested Quality of Service settings for the tactical Signal node are provided in the DTP. The Signal staff will be required to liaise with the Unit hub node and the Regional Hub Node to arrange appropriate QoS settings at the distant end.

MI will need to take responsibility for the TSCIF physical space (fixed or mobile) and the associated accreditation requirements. Also, if required by the S2, MI will be responsible for switching and terminal equipment for NIPRNET and SIPRNET services inside the TSCIF. The S2 is also responsible for all network issues from the Plain Text side of the IG CCI. This includes all routing configuration information for TS/SCI services. It is envisioned that the operation and maintenance of IG and terminal equipment hardware will be an MI responsibility, as well as the training of analysts/operators to maintain the circuit(s). If connected to the TNCC, the operators will be assisted by the help desk personnel at the TNCC's at either Ft Belvoir or Ft Bragg. If connected to NSA or DIA provided service nodes, the S2 will need to ask for assistance from those help desk personnel if the S6 cannot resolve the problems.

Agreement # 4: TS/SCI users will continue to get their TS/SCI network management support from the Trojan Network Operations Support Centers (TNOSC).

TS/SCI reach-back network services performed by the Trojan Network Operations Center in support of field users will not be replaced by the WIN-T Program, even in Increment 3. In other words, MI users in TSCIFs being supported by WIN-T in both Current and Future Force formations will be getting their TS/SCI services from the TNOC or a forward deployed DIA or NSA Regional Service Center. Signal provided Network Service Center- Regional facilities will be able to transport data to the TNOC or other Service Centers in a manner that assures TS/SCI users get the required

quality of service and connectivity to these specialized services.

If and when an S6 or G6, in coordination with the supporting S2/G-2 decide to access TS/SCI networks through theater provided access points, such as a DIA provided JWICS point of presence, they must work with that agency to obtain accreditation, IP addresses, crypto key, etc. that is otherwise provided by the Trojan office/TNOSC at INSCOM.

As part of the 101st CAB fielding in OEF, it was determined by NETCOM and the supporting AGNOSC that they will need to work closely with DISA to overcome the roadblocks that the unit encountered. In the reach back testing that was done by the S6 of the 101st CAB, it became difficult and frustrating getting back to CONUS on NIPR and SIPR through the many firewalls and routers along the way.

While the short-term problems were resolved, the NETCOM G3 and the TCM GNE have taken on the challenge and agreed to roll these networking issues up under Operation Guardian Enable to add to their problem set of things they are trying to solve.

Most Current Acquisition Strategy for Tunneling Packages

The phased acquisition and fielding of TS/SCI Tunneling Packages is now underway.

Phase I - (2010 timeframe) - SCI access, theatre provided equipment, PM WIN-T and G8 FDC funded. The installation of this equipment is performed by FSR's. The FSR's along with network management support at the TNOSC is INSCOM/G-2 funded. The IG design for this phase is based on Trojan equipment standards (3 systems). These systems basically support ONS requirements for CABs and Fires Brigades as determined by the Army G3/5/7. The 101st CAB is the first unit to get Phase I equipment.

Phase II - (2010-2011 timeframe) - SCI access, Theatre

provided equipment, PM WIN-T Incr 1 funded, design based on Trojan equipment or Talon Card (48 systems). These systems support C5ISR ONS requirements.

Phase III - (2013-2015) timeframe (Unresourced) - JWICS and NSA access, PM WIN-T provided equipment - Modular Communications Node - Top Secret (MCN-TS). Signal funded. Target units will be the "have not" Brigades, to include Fires, CABs, and BCT TAC CP's. These systems support WIN-T CDD requirements. However, no approved requirements document, such as a CPD for Increment 3 or a separate ACAT 3 CPD, exists at this time.

Phase IV - (2016-2024) (UN-RESOURCED) - PM WIN-T Incr 3 provided MCN-TS. This phase replaces Trojan LITE functionality for TS/SCI Networks. These systems also support WIN-T CDD requirements. However, once again, there is no approved CPD for Increment 3 of WIN-T at this time, and thus no resources to conduct this Phase.

The Way Ahead

There is much work to do to continue to Migration Plan momentum. There are discussions of another plan to help ensure that we continue to focus on the latest MI requirements changes for initiatives like Relevant Intelligence to the Edge and the Army MI Rebalance initiative.

In the mean time, we need to make sure that the tunneling packages that are fielded to the force in Phases I and II of this plan are successfully integrated into the Army's LandWarNet. We must also continue to develop standards, procedures, TTPs and STRAPs to begin shaping the institutional Army for the changes in the training base.

The TRADOC Capabilities Manager for Network and Services and the TRADOC Capabilities Manager for the Global Network Enterprise will continue to collaborate with DISA, INSCOM, and the Intelligence Center of Excellence to include lessons learned and the IERs in this plan in support of WIN-T Increment

2 and Increment 3 modeling and simulation efforts. The results of WIN-T modeling and simulation will help to predict the ability of the WIN-T's Increment 2 and 3 networks and supporting hub-nodes to support overall "end to end" MI communications requirements.

It is also up to the Army staff to provide the resources needed by PM WIN-T to begin the replacement of over 200 Trojan SPIRIT systems.

Until the communications functionality of Trojan SPIRIT LITE is fully migrated into the WIN-T program, the TROJAN systems and the infrastructure must remain technologically relevant to MI users. Likewise, the enduring technology improvements required to sustain the Trojan network must have consistent MI and Signal leadership support while we continue to work together to converge these two networks and achieve the migration plan end-state.

The WIN-T POR continues receiving a tremendous amount of scrutiny as an ACAT I Program. Increment 2 of the POR has been approved and fielding will be underway beginning in 2011. The question remains, "when can we begin to replace the functionality of TS systems?" Currently, the plan is for migration to begin in 2016 and beyond as part of Increment 3. As stated earlier, the Increment 3 CPD has not been written. It is hard to say exactly what we can do in the mean time without creating adverse effects on the POR.

The primary components for TS replacement will actually be fielded as part of Increment 2 (Tactical Communications Nodes, and Quad Band SATCOM terminals). The only exception is the MCN-TS packages. MCN-TS packages are fundamentally COTS products. The SIGCOE and ICOE will be collaborating to with their acquisition partners to find a way to move forward sooner rather than later to begin this migration.

So my advice to the reader

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is stay tuned. We are making great progress. Our Migration Plan is “one of a kind” at this point. We need to keep working together for all of the right reasons--most notably- the warfighter!

COL (Ret) Scott Long entered the Army in 1970 and retired from the Signal Regiment and the Army in 1995. He currently serves as the PEO IEW&S and ICOE Liaison to the SIGCOE, CDID, and Fort Gordon, Ga. He is in his 15th year in this capacity as the INTEL LNO and has helped lead the Migration Plan effort since 1998. 🇺🇸

ACRONYM QuickScan

ACAT - Army Category	JIOC-I - Joint Intelligence Operations Center- Iraq
ACS - Aerial Common System	JNN - Joint Network Node
ADA - Air Defense Artillery	JWICS - Joint Worldwide Intelligence Communications System
AGNOSC - Army Global Network Operational Support Center	LITE - Lightweight Integrated Telecommunications Equipment
AIMD - Architecture Integration and Management Directorate	MASINT - Measurements and Signatures Intelligence
ARCIC - Army Capabilities Integration Center	MCN-TS - Modular Communications Node- Top Secret
BCT - Brigade Combat Team	MG - Major General
BfSB - Battlefield Surveillance Brigade	MI - Military Intelligence
BG - Brigadier General	MOS - Military Occupational Specialty
BN - Battalion	MSE - Mobile Subscriber Equipment
C2 - Command and Control	NET - New Equipment Training
C5ISR - Command, Control, Communications, Computers, Coalition Intelligence, Surveillance, and Reconnaissance	NETOPS - Network Operations
CAB - Combat Aviation Brigade	NIPRNET - Non-Secure Internet Protocol Network
CCI - Cryptographic Controlled Item	NSA - National Security Agency
CDD - Capabilities Description Document	NSA Net - National Security Agency Network
CDID - Capabilities Development and Integration Directorate	NSC-T - Network Service Center - Tactical
CECOM - Communications and Electronics Command	NSC-R - Network Service Center- Regional
CERDEC - Communications Electronics Research and Development Engineering Command	OIF - Operation Iraqi Freedom
CHARCS - Counterintelligence/Human Intelligence Automated Collection Reporting System	ONS - Operational Need Statement
CHS - Common Hardware and Software	PEO C3T - Program Executive Officer for Command, Control, Communications, and Computers- Tactical.
COIC - Critical Operations Issues Criteria	PEO IEW&S - Program Executive Officer for Intelligence, Electronic Warfare, and Sensors
CONOPS - Concept of Operations	PM - Program Manager
COTS - Commercial off the Shelf	POR - Program of Record
CP - Command Post	QoS - Quality of Service
CPD - Capabilities Production Document	RITE - Relevant Intelligence Surveillance Reconnaissance to the Tactical Edge
CSS - Combat Service Support	RSTA - Reconnaissance, Surveillance, and Target Acquisition
CT - Cipher Text	SATCOM - Satellite Communications
DCGS-A - Distributed Common Ground System- Army	SIGCOE - Signal Center of Excellence
DIA - Defense Intelligence Agency	SIGINT - Signals Intelligence
DISA - Defense Information Systems Agency	SIPRNET - Secret Internet Protocol Network
DTP - Detailed Technical Procedures	SPIRIT - Special Purpose Intelligence Remote Integrated Terminal
FDU - Force Design Update	STRAP - Systems Training Plan
FORSCOM - Forces Command	TAC CP - Tactical Command Post
JTRS - Joint Tactical Radio System	TIB - Theater Intelligence Brigade
HQDA - Headquarters, Department of the Army	TNCC - Trojan Network Communication Center
I2WD - Intelligence and Information Warfare Directorate	TNOSC - Trojan Network Operations Support Centers
ICOE - Intelligence Center of Excellence	TRADOC - Training and Doctrine Command
IER - Information Exchange Requirement	TS - Trojan SPIRIT
IWFA - Intelligence Warfighting Functional Area	TSCIF - Tactical Secret Compartmented Information Facility
IMINT - Imagery Intelligence	TS/SCI - Top Secret/Sensitive Compartmented Information
INSCOM - Intelligence and Security Command	TTP - Tactics, Techniques, and Procedures
IG - Intelligence Gateway	WIN-T - Warfighter Information Network - Tactical
IP - Internet Protocol	
ISR - Intelligence, Surveillance, and Reconnaissance	

WIN-T increment test builds benchmark

By MAJ Michael L. Smith

The product manager for WIN-T Inc 2 recently completed Risk Reduction Event Four at Aberdeen Proving Grounds, Md. from 6-23 July 2010.

The risk reduction events were designed by the PdM as a series of developmental primers to prepare for future test and evaluation events. The primary goals of the risk reduction testing events were to develop and mature test instrumentation, data models, and test design / methodologies that will be used to analyze and evaluate the WIN-T Inc 2 OTM capability in the near future. Later this Fall and early next year, WIN-T Inc 2 will conduct a PQT-C and a PQT-G as it proceeds towards the IOTE. The PQT-C will provide the contractor, General Dynamics the opportunity to internally test and demonstrate satisfaction of all requirements in the WIN-T Inc 2 CPD, dated January 2009, and ADM MC, dated March 2010. Following PQT-C, a government-run PQT-G will be conducted to

formally illustrate requirements compliance using ATEC instrumentation systems. Next, and under the condition of a successful PQT-G, the PdM Inc 2 will move forward with their planning to execute NET, the FDT/E, and the IOTE.

The primary goals of RRE4 were to properly test and document specific requirements from the CPD, ADM MC, and testing community that included the following: VoIP call setup delay and voice latency metrics; PESQ instrumentation testing; VWP performance; battlefield application network integration; conduct IOTE like vignettes; and pre-PQT instrumentation validation. RRE4 activities were executed by utilizing the primary WIN-T Inc 2 CIs that are depicted in Figure 1 below.

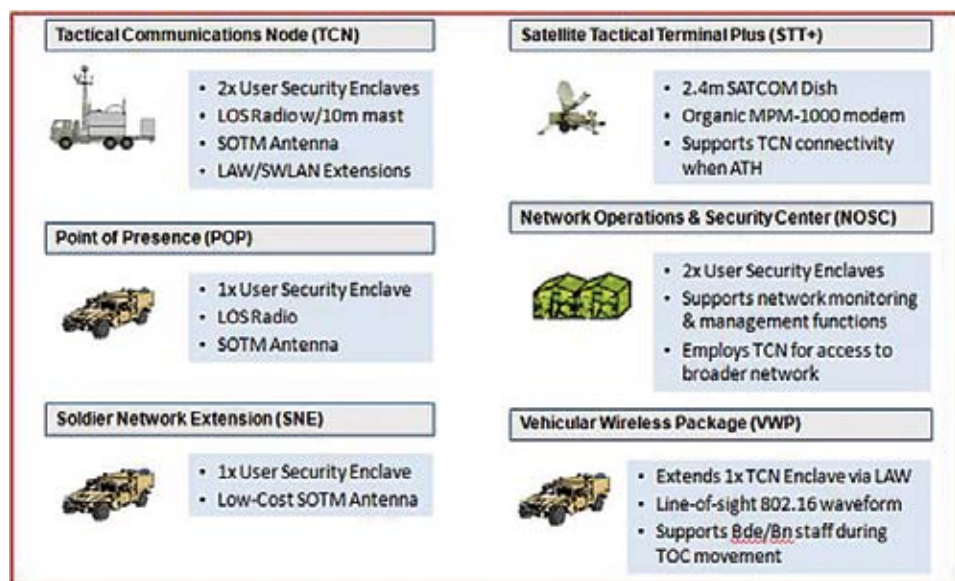
The current VoIP requirements state that the call setup delay must average less than or equal to 10 seconds and voice latency must average less than or equal to 3 seconds. However, VoIP call setup delay and voice latency have never been evalu-

ated by the U.S. Army testing community. Consequently, RRE4 test designs and results may eventually redefine these metrics. Under a new set of VoIP related terminology the testing community was able to meet the intent of the above-mentioned requirements.

The current PESQ requirement states that the system under test must achieve a score of 3.0 or higher on a scale of one to five (one being of poor quality and five being excellent). The PESQ test was also a first for ATC; however, they were able to successfully attain the appropriate licensing and develop a test design that captured the raw data as measured by the PESQ algorithm. Basically, this test inserted an ITU-R approved WAV file at the caller end of the instrumentation. The resulting sound was then measured as it traversed the network and entered the dialed system. Ultimately, ATC will gather the raw data and compare the delta between the initial WAV file and the received sounds in order to calculate the PESQ score for each call.

The current VWP requirement states that data throughput must be at least 5 Mbps at a distance of 4 Km. The VWP is envisioned to allow DIV / BDE / BN CDRs and key staff the flexibility to move around and develop the battlefield with sufficient communications capability. The VWP operates on the 802.16 standard with the LAW antenna and radio. The VWP is a LOS capability that communicates with an associated TCN. At RRE4, the testing community was able to meet the above-mentioned requirement through a series of trials conducted at the Perryman Course, APG.

There is no requirement for the integration of battlefield



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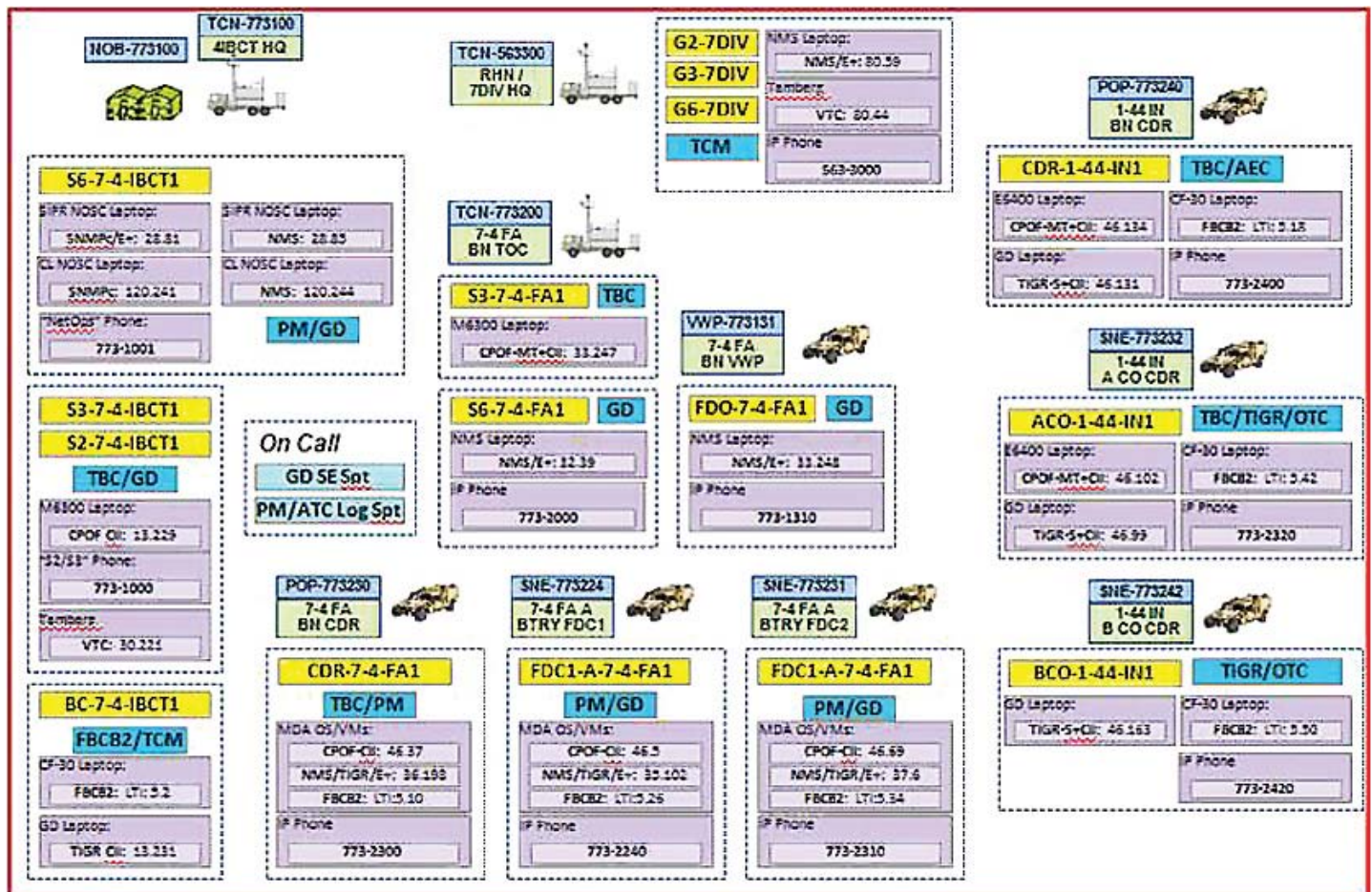
applications into the WIN-T hardware / software architecture; however, reality shows that limited vehicular space will push the Army community to address this issue. We must be able to develop a solution that will allow the use of several battlefield applications without the burden of numerous laptops and servers in the cab of a vehicle. Currently, the proponents of the majority of the battlefield applications have planned their systems to traverse the WIN-T network while maintaining their own autonomous hardware / software solutions. RRE4 was the first opportunity for the community to explore the integration battlefield applications into current WIN-T Inc 2 hardware and software. Figure 2 displays the RRE4 architecture and test suite that was used to integrate the

battle command systems into the network.

PdM WIN-T Inc2 and GD, in partnership with peer PdMs within the battle command community successfully integrated CPOF, FBCB2, and the TIGR applications into several VM and DCE hardware solutions. User interfaces for these applications were installed onto the MDA computer with the result that the user only had to access one display for all of their applications. The overall integration reduced the need for a user to maintain several laptops within the cab of their vehicle. The MDA has the capability to run several applications and toggle between different security enclaves within one display. Because RRE4 was the first experiment to integrate battle command applications into the WIN-T-Inc 2 architecture, PMs still must develop agreements and a way-ahead to fully

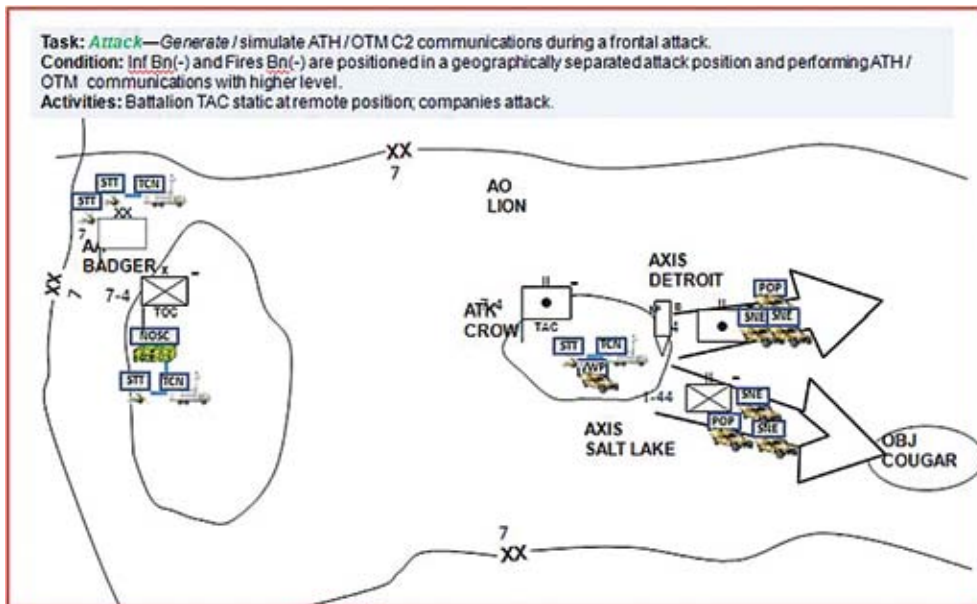
research and test a formal integration.

The operational vignettes for RRE4 were designed by TCM N&S and the PdM Inc 2 in an effort to add some operational flavor and load onto the WIN-T Inc 2 testing network. Initially the network was tested by loading it with Battle Lab developed IER data scripts. These electronic scripts are designed to duplicate the actual voice, data, and video communications requirements within the current BCT force structure. We also developed some live operational vignettes that were conducted both ATH and OTM. The vignettes were the highlight of RRE4 for the majority of the testing community because everyone was able to physically participate as a DIV/BDE/BN/CO level role player in some fashion. The vignettes included the required communications actions that would be



conducted in a BDE assembly area, during a tactical convoy, within an attack position, during an attack, and during a BDE TOC / TAC transition. ATC collected the raw data during these vignettes and will reduce the data to provide some network analysis/performance data back to the testing community. Figure 3 represents an example "The Attack" vignette. Local CIs remained in contact with each other during the fight via LOS and distant CIs remained connected through the NCW SATCOM network. (Note: RRE4 was conducted with a limited number of CIs due to other testing and logistics events and does not fully represent an operational unit.)

WIN-T Inc 2 team participants at RRE4 included the following: Aberdeen Test Center; TRADOC Capability Manager Network and Services; Operational Test Command; Developmental Test Command Army Evaluation Center; Army Test



and Evaluation Command; TRADOC Reliability, Availability, and Maintainability; PdM Tactical Battle Command; and PM FBCB2. These agencies and departments have consistently contributed to and participated in all WIN-T Inc 2 related test and fielding activities in an effort to ensure that the

intent of the user requirements are properly documented, tested, and evaluated.

MAJ Michael Smith was commissioned from Officer Candidate School in 1998 after serving as a Reserve and Regular Army Soldier. He holds a master's degree in telecommunications from the University of Colorado and a bachelor's degree from the University of Maryland. He holds numerous professional certifications in network and systems security. MAJ Smith is currently assigned as the WIN-T Test and integration officer for the TRADOC Capability Manager Network and Services at Fort Gordon, Ga.

ACRONYM QuickScan

ADM MC - Acquisition Decision Memorandum Milestone C
AEC - Army Evaluation Center
APG - Aberdeen Proving Grounds
ATC - Aberdeen Test Center
ATEC - Army Test and Evaluation Command
ATH - At the Halt
BCT - Brigade Combat Team
BDE - Brigade
BN - Battalion
CDR - Commander
CI - Configuration Items
CO - Company
CPD - Capability Production Document
CPOF - Command Post of the Future
DCE - Distributed Computing Element
DIV - Division
DTC - Developmental Test Command
FDI/E - Force Development Test/Experimentation
FBCB2 - Force XXI Battle Command Brigade and Below
GD - General Dynamics
IER - Information Exchange Requirements
IOTE - Initial Operating Test and Evaluation
ITU-R - International Telecommunications Union-Radio

LAW - Local Access Waveform
LOS - Line of Sight
MDA - Multi-Domain Atlas
NET - New Equipment Training
OTC - Operational Test command
OTM - On the Move
PdM - Product Manager
PESQ - Perceptual Evaluation of Speech Quality
PM - Program Manager
PQT-C - Production Qualification Test-Contractor
PQT-G - Production Qualification Test-Government
RAM - Reliability Availability and Maintainability
RRE4 - Risk Reduction Event Four
TAC - Tactical Command Post
TBC - Tactical Battle Command
TCM N&S - TRADOC Capability Manager for Networks and Services
TCN - Tactical Communications Node
TIGR - Tactical Ground Reporting
TOC - Tactical Operations Center
VM - Virtual Machine
VoIP - Voice Over Internet Protocol
VWP - Vehicular Wireless Package

High technology radar goes beyond

By Kristen Kushiya

FORT BELVOIR, Va. - To the untrained eye, U.S. Army radar-generated maps may look like a

bird's-eye view of a city at night; however, these images contain useful intelligence, surveillance and reconnaissance information that reveal concealed objects by

penetrating foliage, buildings and some terrain while overcoming camouflage, concealment and deception techniques.

These maps, which high-

Signal Soldier takes first place in safety video competition

By SGM Carrie F. Stevenson

Army SPC Canaan Radcliffe, 55th Signal Company (Combat Camera), Fort Meade, Md. took first place for his production of "Vehicular Safety-Cell Phone Usage Version 2" in the second ever, U. S. Army Peer-to-Peer Safety Video Competition 2010.

The U.S. Combat Readiness/Safety Center and the Better Opportunities for Single Soldiers program joined to evoke the support of Soldiers at all levels in promoting safety awareness. This is a progressive Army initiative which transcends traditional ideas of communicating the Army's Safety vision by drawing on a popular social medium to connect audiences to a serious subject.

The competition maximized its efforts to rapidly shape modern culture by effectively rallying Soldiers to make use of their individual skills, experience and imagination to stir the individual consciousness and bring about social change. A Soldier's perspective is an essential ingredient in transmitting the Army's Safety message while providing relatable and relevant content to remind the intended audience of their individual and collective responsibility in safeguarding, preserving, and protecting our most valuable assets.

SPC Radcliffe, a native of Greenville, S.C. serves as a 25V Combat Documentation Production Specialist with just over two years of

military experience. He like other active Army, Army Reserve, and National Guard Soldiers entered into this six month competition committed to the task of increasing Soldier Safety

awareness, and reducing or eliminating accidental losses. This competition has helped him to continue growing as a professional and demonstrating his knowledge in film and video production acquired while attending the Defense Information School, and Full Sail University.

SPC Radcliffe said, "The peer to peer video contest is important because it provides a chance for Soldiers to impact each other on a peer-level, Army wide. The contest was very open-ended and provided plenty of breathing room for creativity. Just as YouTube and Vimeo are sources for knowledge and inspiration, the peer to peer video program lends itself

to providing numerous facets of information about safety to Soldiers and civilians"

SPC Radcliffe's efforts resulted in a demonstration of his ability to inform, persuade, motivate, inspire, and engage his peers on the importance of safety while driving. His depth of purpose sends a message that clearly resonates with Soldiers, leaders and families. The video can be seen at the U.S. Army Combat Readiness and Safety Center website: <https://safety.army.mil/Default.aspx?alias=safety.army.mil/peer-topeer>

SGM Carrie F. Stevenson is the chief, Visual Information Staff NCO in the Office, Chief of Signal, 15th Signal Brigade at Fort Gordon, Ga.



SPC Canaan Radcliffe

the foliage for useful intelligence

light boundaries not visible to traditional electronic sensors, are made possible by the U.S. Army's Tactical Reconnaissance and Counter Concealment Enabled Radar, or TRACER. Developed by the Research, Development and Engineering Command's communications and electronics center, TRACER is a mid-range, long wavelength synthetic aperture radar system that provides all-weather persistent surveillance.

Due to its decreased size, weight and power consumption compared to the predecessor Foliage Penetration Radar program, or FOPEN, TRACER operates on manned and unmanned platforms and produces images on-board in less than five minutes.

To introduce TRACER's capabilities to Army and Department of Defense technology influencers and to emphasize the technology's ability to penetrate more than just foliage, the Communications-Electronics Research, Development and Engineering Center hosted a VIP presentation 19 May at its Night Vision and Electronic Sensors Directorate facilities at Fort Belvoir, Va.

The predicted challenge of presenting TRACER to the Army at large is demystifying the notion

that TRACER and FOPEN are only for foliage penetration.

"In some ways, we are a



U.S. Army Photo

Participants had a first-hand look at posters of TRACER generated images displayed at the TRACER VIP Presentation at Fort Belvoir, Va. on 19 May.

victim of our own success since FOPEN stands for foliage penetration but does more than just foliage penetration; it can reveal various areas of interest that may be camouflaged or obstructed and has applicability in multiple areas of operation," said Dan Kuderna, chief, CERDEC Intelligence and Information Warfare Directorate Radar and Combat Identification Division.


The TRACER program began in April 2007, but FOPEN has been in the field since the late-90s and is the result of a joint Defense Advanced Research Project Agency, U.S. Air Force and Army Advanced Technology Development program. FOPEN was originally used to demonstrate low frequency radar's ability to penetrate, but its proven success allowed it to be used for a variety of missions, said Kuderna.

As a follow-on to FOPEN, the TRACER system can be tailored to specific missions by providing a variety of SAR images including strip maps and spotlight and circle images.

Participants had a first-hand look at the TRACER payload integrated on a C-12 platform and posters of TRACER-generated images.

"Overall, the presentation went very well," Kuderna said. "VIPs got a positive impression, and there was serious interest in bringing the capability forward."

During the fall, TRACER was scheduled for testing on NASA's unmanned Predator-B (IKHANA), and later on Air Warrior.

Kristen Kushiya is a staff member in the RDEC CERDEC Public Affairs Office. 



U.S. Army Photo

The C-12 platform hosted the TRACER payload at the TRACER VIP Presentation at Fort Belvoir, Va. on 19 May 2010.

TITAN technology improves networks

By Sharon Rushen

Fort Monmouth, N.J. -- More than 35 engineers and scientists gathered at the Communications-Electronics Research, Development and Engineering Center's Network Operations Interoperability Lab March 25 to witness a demonstration of two cutting-edge networking technologies. The Virtual Ad hoc Network or VAN, an in-house testbed, was utilized to demonstrate progress made to a key networking technology -- Tactical Information Technologies for Assured Network Operations, or TITAN.

Attendees included Army product managers and CERDEC senior leaders, who had an up close look at the VAN test bed developed by CERDEC's Space and Terrestrial Communications Directorate. The VAN testbed offers an efficient platform for technology developers to resolve issues with network applications

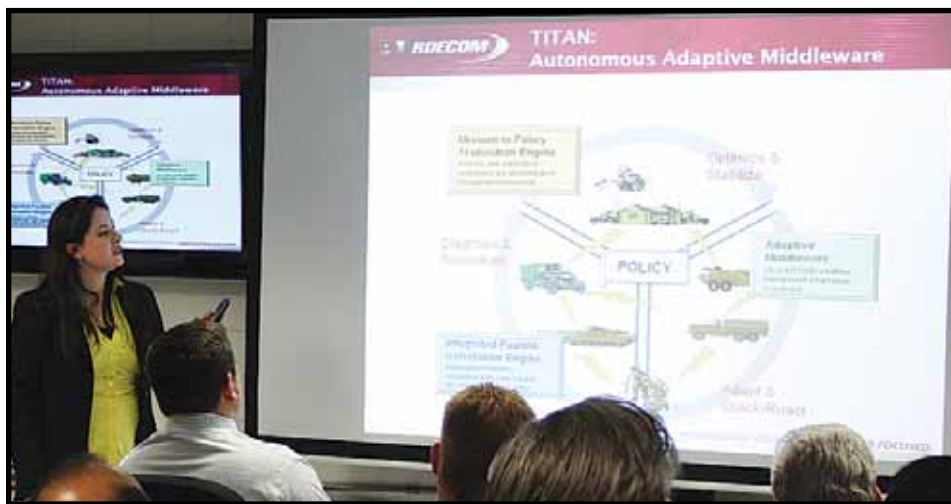


Photo by Edric Thompson

Kim Moeltner briefs CERDEC senior leaders and project managers on TITAN technology components at the 25 March 2010 demonstration.

before fielding them, said Rosie Bauer, NetOps branch chief.

For Soldiers, the VAN testbed will

facilitate easier issue resolution for network applications before fielding them.

"We can start looking at some of the NetOps types of problems Soldiers are having out there, whether it's configuring the network, planning the network or monitoring it - you can actually start looking at that and providing solutions," said Bauer.

For the recent demo, Bauer's team worked with TITAN engineers to exhibit how the VAN can provide a high fidelity testbed environment for network applications such as TITAN.

"The Soldier gets a better product because the software is tested on large scales and it's tested in a real environment. Any bugs are worked out, any inefficiencies are worked out and that's what TITAN is really leveraging it for," said Kim Moeltner, TITAN network management technology lead.

Because the testbed enables applications to be evaluated in a virtual field environment, utilizing VAN for in-house testing helps to alleviate the costs associated with field tests, particularly in the area of scalability.

"It's almost like you package that (the field) in a lab form of environment. It's very costly to have 3,000 platforms; it's a lot of money, a lot of man power. So you can use this testbed to emulate that, to represent the different echelons. You find out how it's really going to perform; you make



This image shows eight traffic flows being sent across a network. The first seven are routine priority flows of an image of Soldiers. The last is a high priority flow containing the image of an aerial view map. Autonomous Adaptive Middleware has acted to ensure the high priority image traversed the network well ahead of the routine flows where normally they would have competed for bandwidth equally. AAM also intends to add mechanisms for improving the speed and reliability of the low priority flows by adding compression and queuing mechanisms.

sure that you take care of all your issues before you get out there so that when you do get out there, you get optimal performance,” said Bauer. Research and development efforts for VAN were funded by the Office of the Secretary of Defense, Director, Defense Research and Engineering. VAN testbed technologies allow multiple applications running on virtual nodes, or connection points, to send internet protocol packets to each other via a simulated ad-hoc network.

The technology does so by simulating different waveforms of Army radios, replicating the bandwidths and time delays associated with the particular waveform. Using a Graphical User Interface, the testbed illustrates the different terrains found in different field environments.

“We are providing a testbed that can simulate satellite and radio communications that they would experience in the field. We are basically taking the field environment and putting it into a box and using that as a foundation for testing,” said Keith Whittaker, S&TCD NetOps lab lead.

Although Moeltner’s team has utilized the VAN for testing in the past, the March demo was the first time they showed their customers the progress they have made in TITAN’s core network management technology areas.

“It’s pretty much the milestone to show where we’ve come from and where we’re headed to, what we have to offer when this reaches its conclusion,” Moeltner said. “We’ve run our software on it, we’ve tested it, we’ve seen what it can do and what areas need to be improved on it, and we’ve worked on it based on what we saw on the VAN.”

To show their progress, the TITAN team exhibited work done in all of the technology’s product areas to the customers in attendance, including Project Manager Warfighter Information Network – Tactical; Project Manager for Test, Measurement, and Diagnostic Equipment, of the Program Executive Office Command, Control, Communications Tactical; Project Manager Battle Command and Project Manager Network Systems Integration of Program Executive Office Integration.

TITAN is an Army Technology Objective that develops, matures and demonstrates modular technologies




This image shows 11 nodes being simulated on QualNet CES. These nodes are members of three separate subnets which fragment and heal as the simulation runs. Mission To Policy Translation Engine handles these topology changes by instructing the subnets on how and when to make connections to their target nets thereby enforcing the communication goals dictated by the mission planner.

that improve network planning and management, security tools to protect mobile networks and agent-enhanced battle command tools to enable real-time situational awareness. Using the VAN testbed to create a wideband networking waveform as the main waveform environment, Moeltner and her team ran through different scenarios to show how TITAN’s four technology product areas perform and showcased improvements made to them. The technologies include the mission of policy translation engine, the Information Assurance fault correlation engine which works in tandem with the response system and the adaptive middleware. The collaborative demonstration of the VAN and of the progress of TITAN exemplifies S&TCD’s aim of providing network operations capabilities that can both effectively emulate and evaluate network operations and incorporate valuable network applications to solve real problems in the battlefield, according to Henry Muller, director of S&TCD.

“We are one of the few organizations that are looking at NetOps from

a holistic view. We don’t only consider how Network Management applications perform on a network; we also consider the integration and inter-relations of all four pieces of NetOps - Network Management, Information Assurance, Information Dissemination & Management, and Spectrum Management,” Muller said. “Together with TITAN and the OSD, we are able to perform full analysis of applications from a NetOps perspective.” Such network operations demonstrations and further developments will help alleviate the burdens associated with network connectivity for Soldiers in the field.

“The Warfighter no longer has to worry about how well the network is performing; he or she just needs to worry about mission execution,” Muller said.

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FORSCOM training prepares Signal Soldiers for the fight

*By LTC Mark Haythorn and
MAJ David D. Biggins*

On today's battlefield, brigade and battalion Signal officers, commonly known as a battle staff's "S6," are faced with many challenges due to almost nine years of protracted conflict.

Among these challenges are the post-deployment reset of Information Technology equipment, the introduction of new technology or system upgrades, and the

demands of significant turnover of trained personnel not just in the S6 sections but across an entire unit.

In recognition of these ongoing Signal-specific challenges, battalion and brigade commanders rely on their local experts, their S6 Soldiers, to provide the crucial signal training across their formations.

But who trains the trainers?

That's where U.S. Army Forces Command enters the equation. Training a unit's Signal Soldiers to

be the trainers, while simultaneously ensuring the unit's S6 section has the requisite skills, abilities and knowledge to guarantee mission success across the formation, is what FORSCOM specialized, mobile training teams do. These teams, called Signal Support Teams, first fielded in 2009, are staffed with Signal professionals who understand the challenges faced by other Army communication professionals at all levels.

Each SST is staffed with Soldiers who have had deployment experience within an S6 section. These Soldiers, who also have diverse command and control skill-sets, are teamed with contracted industry professionals. Each SST has one field grade officer, one senior NCO and five to seven contractors, based on the size and complexity of the supported unit's mission.

"The pace of continuous combat operations in two wars for more than eight years is consuming our readiness as fast as we can build it," said BG Ron Bouchard, FORSCOM G6. "The SSTs are essential to helping units return to the level of readiness necessary to conduct future missions."

To achieve the required results, FORSCOM SSTs provide crucial, synchronized training and assistance to Signal officers, commanders and associated staff at all levels by supplying a training resource with the necessary expertise, coupled with shared battlefield experiences. The intent is to provide FORSCOM's brigades and battalions with mission-oriented Signal training relevant to the challenges of today's battlefield as they prepare for future operations. This is part of the Army Force Generation process, which is also central to FORSCOM's role as the Army's Readiness Core Enterprise.

"The FORSCOM G6 strategy is to help focus Warfighter Land-



Signal Support Team member Alverton Lewis provides over-the-shoulder training to Soldiers in the S4 section of the 185th Theater Aviation Brigade of the Nebraska Army National Guard at Camp McCain, Miss. in July 2010.

WarNet requirements to enable expeditionary units at all echelons and through all phases of the ARFORGEN cycle to reliably exchange information required to perform in today's joint war fight. The SSTs are a vital component to the execution of this strategy," BG Bouchard said.

LandWarNet is the Army's contribution to the Global Information Grid that consists of all globally interconnected, end-to-end Army information capabilities, including the associated processes and people needed to collect, process, store, disseminate and manage information on demand to support war fighters, policy makers, and support personnel. It includes all Army owned or leased and leveraged Department of Defense/Joint communications and computing systems and services, software (including applications), data security services, and other associated services.

In the rapidly expanding information age, LandWarNet alone is challenging for Signal officers to remain current and provide expert advice to their commanders. But Signal officers must also understand how information systems uniquely function in their specific unit. At the same time Signal officers must be aware of evolving hardware and software enhancements. This environment is further complicated by the Army's expanded use of commercial off-the-shelf equipment, and the increasingly complex battle command systems that are being fielded. This is that reality that makes it clear that Signal officers and the Soldiers they lead face a daunting task.

For the commanders of today's Signal Soldiers, this presents a complex training challenge, further exacerbated by frequent staff assignment adjustments and expanded tactical Information Assurance requirements.

Early assessments indicated traditional training programs were not keeping pace with technical advancements and systems improvements. There existed a growing need for specialized technical training that served as the catalyst for FORSCOM to create and

resource the SSTs. As the primary source of Signal support to brigade and battalion commanders across the continental United States, FORSCOM G6 identified the needs and proactively implemented a system of mentoring for unit Signal officers, S6 staffs and to their embedded LandWarNet forces.

To be successful, FORSCOM leaders emphatically acknowledged a specialized training program needed to be flexible enough to meet a wide variety of unit signal training specific needs and still fit into the ARFORGEN model. Planners postulated that a critical element in the training process is that Soldiers are trained by instructors who have firsthand knowledge and experience of modern battlefield communication challenges.

"With the deployment of FORSCOM SSTs, performance oriented G6 exercises typically implemented during a unit's Command Post Exercise 30 to 60 days prior to deployment, become an effective training event for automation specialists and communicators," said LTC Mark Haythorn, chief, Training and Exercises Branch, FORSCOM G6.

What makes this program special is that it features experienced Signal Soldiers and civilian contractors combining their shared experience and technical knowledge to provide S6 Soldiers with highly complex technical training in an over-the-shoulder environment, so that the information is easier to understand and absorb. Ultimately, this affects Soldier readiness, enabling them to use their unique equipment in a safe environment to ensure they are ready to deploy.

Four SSTs have been established since the program's inception. These SSTs are able to conduct simultaneous missions for FORSCOM and to expedite assistance to multifunctional units. Each unit's training is tailored according to its specific needs, providing key areas of focus in server and workstation administration, tactical radio, IA, and network operations, such as connectivity to other Army Battle Command System enabled units.

FORSCOM units may receive

SST support by submitting a request through their S3/G3 chains of command to be included in the quarterly FORSCOM G3-hosted ARFORGEN Training Support and Resource Conference. At this conference, SSTs are resourced to units with an assigned deployment Latest Arrival Date, which includes support for active duty and compo 2/3 units. Compo 2/3 unit requests are initially presented at a unit's Joint Assessment, and then presented by First Army representatives at a quarterly TSRC for SST inclusion in a unit's training plan.

Since the inception of the SST program in 2009, more than 2,000 Soldiers from 50 active and Reserve component units have been trained by the SSTs. Best practices from these units are captured and incrementally introduced into the program to sustain team proficiency, performance and relevance.

Feedback from G6/S6 personnel has been overwhelmingly positive. Requests for SST support have also been increasing monthly as word of the program spreads in the Army's G6/S6 community.

After conducting numerous SST missions for deploying units, quarterly SST training reviews identified Signal training gaps that continued to challenge FORSCOM units. The skill sets of IA, MS SharePoint and Secret Internet Protocol Router and Non-classified Internet Protocol Router Access Points were added to the services available to units that receive SST support to address the training gaps identified by conducting SST missions in support of the operating force. The ability of the SSTs to react to the continual modernization of technology and the needs of units is one of the major strengths of the program.

"My vision for the FORSCOM G6 is to be the preeminent provider of expeditionary campaign-capable LandWarNet Forces to Combatant Commanders," said BG Bouchard. "The SST is an essential piece of the equation necessary to realize this vision."

FORSCOM's support to the operating force LandWarNet Soldiers and S6 staff sections is

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an enduring requirement, and it will be enhanced further by the stand up of the Battle Command Assistance Teams, starting in fiscal year 2011. Although the original mission of the SST is almost identical to the mission of the BCAT, the BCATs institutionalize the civilian members of the teams by adding Table of Distribution and Allowances positions to replace the contracted SST personnel. The addition of BCATs will allow FORSCOM to provide support to units not only in the Train Ready phase of ARFORGEN, but also in the Reset phase.

FORSCOM, as the Army's largest command, trains, mobilizes, deploys, sustains, transforms and

reconstitutes conventional forces, providing relevant and ready land power to combatant commanders worldwide in defense of the nation both at home and abroad. The use of its SST is yet another way the Fort McPherson-based command meets that challenge.

For more information about FORSCOM's SST program, contact LTC Mark Haythorn, Chief, FORSCOM G6 Training & Exercises Branch, (404) 464-5816 mark.haythorn@us.army.mil or forscomb-cat@conus.army.mil

LTC Mark Haythorn, is Chief, Training & Exercises Branch, FORSCOM G6 TAC C4 Division and MAJ David D. Biggins, FORSCOM G6 Training Officer, FORSCOM G6 TAC C4 Division. 

ACRONYM QuickScan

ABCS - Army Battle Command System
ARFORGEN - Army Force Generation
BCAT - Battle Command Assistance Teams
CONUS - Continental United States
COTS - commercial off-the-shelf
CPX - Command Post Exercise
DOD - Department of Defense
FORSCOM - U.S. Army Forces Command
GIG - Global Information Grid
IA - Information Assurance
IT - Information Technology

JA - Joint Assessment
LAD - Latest Arrival Date
MS - Microsoft
NCO - Non-commissioned Officer
NIPR - Non-classified Internet Protocol Router
SIPR - Secret Internet Protocol Router
SNAP - Secret Internet Protocol Router Non-classified
Internet Protocol Router Access Points
SST - Signal Support Teams
TDA - Table of Distribution and Allowances
TSRC - Training Support and Resource Conference



16th Signal Company Renegades working behind the scenes in Kandahar

SFC Eric James

In the Wizard of Oz, Dorothy would say, "There's no place like home." For her, it only took her three clicks of her feet to return to Kansas.

For Soldiers deployed to Iraq and Afghanistan, it is not nearly that easy - in most cases, it will be a full-year before these men and women can return home.

However, accommodations in theater are steadily improving to align with what the Soldiers might expect in garrison. Right away, Soldiers usually notice that there is air-conditioning and polished floors in their new workplaces, but there is something that is just as valuable present that usually goes unnoticed for quite some time - the complex network of telephone and internet cables tactically installed behind the walls and ceilings.

If someone asked the man behind the curtain who is responsible for all of these great installs, he would reveal the answer: the 16th Signal Company (Tactical Installation and Networking) and its ITT contractor partners. In Afghanistan, specifically, Senior Cable Installer CPL Douglas Brown and ITT Team Lead Robert M. "Mike" Francis, led a mixed group of Soldiers and civilians to ensure customers' needs are being met and that the work is up-to-standard. This collaboration has been efficient and effective over the



SPC Amber Maxwell, SGT Shumbey Calvin and SPC Kristoffer Alganon check the ANTCS 93 Satellite van.

past several months - the communications infrastructure for new buildings has been technically sound and installed remarkably fast.

Their latest project showcases their involvement. The project focuses on a series of buildings that will be used in the near future by the 4th Brigade Combat Team (82nd Airborne Division) from Fort Bragg, North Carolina. Although it is not completed, the project has already consumed over 55,000 feet of telephone and internet cable, 5,500 feet of conduit, a complete conduit system, and extensive electrical wire routing.

Mr. Francis says that the credit belongs to the Soldiers and contractors for their hard work and dedication. "They are definitely some of the finest at what they do. They're quick to learn and can definitely adapt." Although the bulk of their current workload centers on inside plant installation, Mike is eager to expand the Soldier's knowledge and skills. "I'm hoping to get them into the outside [plant installation] part of the job, manholes and the like."

Judging from the positive energy that already exists within the group, it's a safe bet that in the future this team of skilled professionals will work together to make sure the job is done. And that is a good thing for Soldiers theater-wide because although they cannot click their heels and suddenly be in Kansas, they can at least enjoy some of the accommodations which may make the deployment more comfortable - like a home. 🏠



SPC Perry Draper installs cable in a ceiling crawl-space.

A tactical commander's vision of ideal full spectrum communications

By MAJ Paul Sparks and MAJ Graham Fox

The ability to access Secure Internet Protocol Router Network data from the platoon through brigade levels at any time and from any location is paramount to the successful execution of full spectrum operations. Integral to this process is providing connectivity to Army Battle Command Systems in garrison, field, and combat environments. This requires High Data Capability Terrestrial Radio systems that ensure real-time SIPRNet connectivity during field exercises and combat operations, as well as via the garrison infrastructure. Critical to this model is the integration of the tactical Joint Network Transport Capability and the U.S. Army Network Enterprise Technology Command's Network Service Centers throughout the Global Information Grid. This can and will provide an overall end state of having one single Army network that is accepted and endorsed by the senior warfighting Commanders, G6/S6s, and the senior U.S. Army NETCOM leadership.

Partner with Your Network Enterprise Center

Units can obtain ABCS connectivity through their garrison infrastructures. Currently, the Army's divisions have made independent efforts to establish tactical SIPR networks on garrison installations which are located in the continental United States.

The 82nd Airborne Division accomplished this task in late 2008 and worked in close coordination with the Fort Bragg Directorate of Information Management, now known as Network Enterprise Centers. This painstaking process included the Contracting Office, U. S. Armed Forces Command, and Department of the Army. Together, we gained approval, funded, and installed the required networking equipment. The end result provided every commander and staff officer at battalion level and above in the 82nd Airborne Division with the capability to operate ABCS in their office areas.

From May to December 2008, the 82nd Airborne Division successfully installed a SIPR Deploying Force / Generating Force (DF/GF) infrastructure into the Fort Bragg DOIM network architecture. MAJ Hac Nguyen, division G6 telecommunications engineer (FA24), was the project lead that developed an integrated solution between garrison and tactical networks.

The first phase was to build a centralized server room approved for open storage of secret classified equipment, specifically the division and brigade ABCS servers (Battlefield Command and Control System or BCCS stacks). The second phase was to provide this server room with SIPRNet connectivity across the Fort Bragg DOIM network that would

maintain a logical separation between the division's tactical and DOIM's garrison networks. Additional routers and switches were purchased and installed in every division, brigade, and battalion headquarters building. This allowed tunneling of the division's tactical deploying force network through the DOIM's generating force network, resulting in a logical and physical separation of tactical and garrison networks while establishing a new SIPRNet capability to the warfighters.

Establishing this DF/GF backbone began with a simple information brief to the director of the Fort Bragg DOIM, and ended with a formal briefing to the FORSCOM G6. This ultimately led to funding approval from the Assistant Secretary of the Army for Acquisitions, Logistics and Technology (ASA/ALT).

Final approval and installation was delayed for months due to assiduous explanations required at every step of the process to justify the need to run tactical ABCS in garrison. A side benefit of the long planning process was the building of stronger relationships between the division G6 and the Fort Bragg DOIM. In the end, the 82nd Airborne Division received approval to spend \$1.2 million of its Operations and Maintenance, Army (OMA) funds to build the server room and install the DF/GF infrastructure to more than 60 locations on Fort Bragg.

In order to combine tactical and garrison SIPRNet networks, the division G6 and the DOIM established a Memorandum of Agreement, which allowed tactical communicators to have system administrative rights and privileges.

The Fort Bragg DOIM uses the Remedy trouble ticket system to manage thousands of customer requests annually. The Remedy Ticket System was revolutionary in tracking and maintaining network changes, but soon proved cumbersome as too few system administrators were on hand for a military population of more than 60,000 Soldiers and civilians. To assist the DOIM, an agreement was crafted that ultimately allowed 82nd Airborne Division Signal Soldiers to be delegated duties and responsibilities for managing the Division's Organizational Units (OU) on the SIPRNet.

This win-win situation enabled Soldiers to maintain their communications skills as system administrators while significantly reducing the number of trouble tickets on the SIPRNet. Incorporating these initiatives into future programs like the NSCs will continue to enhance the services provided by the Signal community to the warfighters.

On the Battlefield

Meeting the warfighters' garrison communications requirements was only the first step in providing SIPRNet to the formations. The next key devel-



Signal Soldiers in Iraq set up an antenna for a Heavy TROPO AN/TRC-170V2.

opment was to replicate the brigade and battalion level services down to the company level and below in a tactical environment. Working two independent projects with Harris Corporation, the 82nd Airborne Division thoroughly tested the Harris PRC-117G and RF-7800 radios at the company and platoon levels, to include en route strategic air communications and communications on-the-move.

These radios provided company commanders and platoon leaders chat, e-mail, and data file transfer over SIPRNet. The 4th Brigade Combat Team's 2-508 Parachute Infantry Regiment initially validated PRC-117G and RF-7800 capabilities during two Army Force Generation reset digital exercises. PRC-117Gs and RF-7800s cost far less than the funding of Program Manager Joint Tactical Radio System and Future Combat Systems. These radios are available today and can be fully integrated into the Warfighter Information Network-Tactical architecture.

The 2-508 PIR incorporated the Harris systems into key training events to include an air assault operation, a three-day mounted and dismounted platoon external evaluation, and most recently the Joint Readiness Training Center rotation 09-05 at Fort Polk,

La. During the air assault operation, the 2-508 PIR Battalion Tactical Operation Center provided access to SIPRNet via its Command Post Node. A PRC-117G connected to the CPN allowed SIPRNet data to pass to other PRC-117Gs located at reconnaissance elements 15 kilometers from the 2-508 TOC, the UH-60 C2 aircraft utilizing the aircraft's UHF antenna, and the Air Assault Commander's RTO.

The 4th BCT's Unmanned Aerial Vehicle full motion video feeds were provided by connecting the UAV Ground Control Station, a commercial-off-the-shelf video server, and the Battalion's CPN. From the time the C2 aircraft left the ground, the PRC-117G network afforded the Air Assault Commander and leaders in the C2 aircraft access to SIPRNet Web sites, full motion video from the UAV, e-mail, Sharepoint Portal Services, and mIRC chat.

Reconnaissance elements with networked infrared video cameras also provided real-time streaming video of the objective. This validated 2-508 PIR's first test of the PRC-117G's capabilities and opened the door for additional applications to extend secure data

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outside of a battalion TOC to leaders on-the-move.

During the EXEVAL, 2-508 PIR outfitted its platoons with the PRC-G. Additionally, RF-7800 radio systems extended SIPRNet services between the UAV GCS, 2-508 PIR TOC, and 4/82 BCT TOC that were located in three separate areas 10-15 kilometers apart. Thirteen platoons rotated through the three-day exercise, providing leaders and radio telephone operators the opportunity to see the PRC-117G perform in both vehicular and manpack configurations.

Using the PRC-117G's internal Global Positioning System and Falconview software, 2-508 PIR developed the means to track friendly forces by an icon representing the physical location of the radio. This application works extremely well for dismounted Soldiers, providing situational awareness of friendly forces.

If the application is reengineered in the future, it could be incorporated into the Blue Force Tracker network architecture. The highlight of the exercise occurred one night after a platoon conducted a fourteen mile road march to the objective rally point (ORP) while being tracked via the PRC-117G's GPS. Approximately two kilometers from their objective, the RTO attached a tactical laptop to his PRC-117G, pulled up the UAV feed, and started mIRC chat with the UAV operator located approximately 20 kilometers away. Rather than transitioning to provide full motion video coverage of the objective, the UAV continued to track the platoon's position in their ORP. With a few key strokes (specifically, "fly over the damn objective!"), the platoon leader was able to effectively direct the UAV operator to re-orient his UAV's flight path. Thus 2-508 PIR successfully proved that with the PRC-117G, tactical leaders can have direct access to combat multipliers previously limited to battalion and brigade levels.

The 4/82 BCT's JRTC Rotation 09-05 was the first rotation to implement the Company Intelligence Support Team concept. Each battalion was allocated a hardstand building with four rooms for its CoIST cells requiring roughly four SIPRNet connections including Tactical Ground Reporting System, SVOIP phone, Advanced SINCGARS Improvement Program radio-simulator, and a workstation for e-mail and chat capability.

Throughout the Force-on-Force phase of the rotation, units occupied firebases that in many cases did not have data connectivity. 2-508 PIR was able to bridge this gap by extending its own CPN's SIPRNet to multiple firebases using a RF-7800W/PRC-117G hybrid network. Additionally, 2-508 PIR enjoyed SIPRNet on-the-move-throughout the majority of their JRTC battlespace. This successful application of 2-508 PIR's hybrid network was evident as other battalions were forced to restrict their CoISTs to facilities where local fiber connectivity was provided by JRTC. Freed from the hard-wire tether, 2-508 PIR gained freedom of maneuver in their battle space.

Ready When the Nation Calls

Historically, the primary mission of the 82nd Airborne Division has been as a strategic response force that conducts airborne operations with forcible entry capability. While once exclusively an 82nd Airborne Division mission, the responsibility to provide the nation's Global Response Force has broadened during the Global War on Terror, with both the 101st Airborne Division (Air Assault) and the 10th Mountain Division recently providing BCTs for this mission.

Readiness and no-notice capabilities do not happen by accident, but rather with foresight, investment, and training – joint training. Probably the most complicated aspect of this mission is providing tactical commanders with access to digital Battle Command systems while in en route.

The 82nd Airborne Division's Network Support Company implemented an inter-aircraft network by using the PRC-117G in conjunction with the Secure



Signal Soldiers perform maintenance on a TACSAT Phoenix terminal AN/TSC-156.

En-route Communications Package-Improved system during three separate Joint Forcible Entry Exercises.

This capability provided real time SIPRNet mIRC chat, e-mail, and file transfer between division, brigade, and battalion commanders, their Assault Command Posts, and the Joint Operations Center. Installing an Inmarsat radio in the lead aircraft provided SIPRNet reach back to a point of presence at the 18th Airborne Corps Joint Task Force compound. The SEC-OMP-I systems then extended the SIPRNet through the formation over the PRC-117G network.

With PRC-117G stacks installed in the five aircraft, commanders were able to simultaneously pass data and line-of-sight voice communications between the aircraft at distances in excess of 40 NM. The PRC-117G radio can operate in any C-17 aircraft without special modifications to the aircraft's antenna systems or fuselage. Unmodified SECOMP-I systems without the PRC-117G have never successfully implemented this capability. This is the first time in the history of Airborne Operations where commanders, while in flight, were able to receive and share SIPRNet data prior to exiting the aircraft.

The Way Ahead

The 82nd Airborne Division has proven that SIPRNet can be rapidly deployed to the lowest levels of command, on-the-move, including while in flight. The 2-508 PIR validated this concept through the integration of PRC-117Gs, RF-7800s, and JNTC equipment during multiple field training exercises and JRTC 09-5. These COTS radios are readily available as the sourcing solution to meet the Army's requirement for SIPRNet connectivity at the company and platoon levels.

Moreover, the division's Network Support Company confirmed that SECOMP-I modified with PRC-117G radios provides SIPRNet communications while in flight, allowing commanders access to vital Battle Command systems during forcible entry operations. Leveraging the capabilities of the PRC-117G and RF-7800 radios directly translates to warfighters having SIPRNet voice and data at anytime and from any location.

LTG Jeffrey Sorenson, the Department of the Army chief information officer (CIO)/G6 and MG Susan Lawrence, commanding general, NETCOM, have been tasked by the Army Chief of Staff to standardize the Army on a single enterprise network within one year. This is a complex problem that the CIO/G6 and NETCOM staffs have scrutinized and are attacking through many efforts. Updating AR 25-2 "Information Assurance," consolidating all CONUS NECs under one command, and establishing NSCs for enterprise service management are guiding the Army towards having one log-in and e-mail address, along with singular access to any of the institution's applications, databases, and Battle Command systems.

Activated in February 2009, the 7th Signal Command (Theater) has the mission to extend network capabilities to operating and generating forces in support of CONUS-based information-enabled expe-

ditionary operations; integrate, secure, and defend the network; and enable a global collaborative environment. BG Jennifer Napper, commanding general, 7th SC (T) has personally visited many major Army installations in CONUS in order to brief the standardization of NECs and capture the warfighter's network requirements and concerns.

The 7th SC (T)'s two recently activated Signal Brigades, the 93rd and the 106th, exercise C2 over the NECs in CONUS. Additionally, these brigades provide Battle Command Assistance Teams to assist corps, division, and brigade combat team headquarters with migrating their portals, Army Battle Command Systems, and other data from CONUS to the theater of operations during deployments. The 7th SC (T)'s mission is critical to the integration of the separate Army networks located throughout CONUS into a sole Army domain under one standard.

The future of signal support relies on the Signal Corps' leadership embracing the integration of tactical C4I/JNTC into the NSCs to maximize data connectivity to the warfighter. The concept of utilizing the NSCs to maintain secure communications to a brigade for daily garrison operations through deployment into a theater of operations, without a significant communications outage, was confirmed by an operational validation between the Fort Bragg SIPRNet NSC and the 18th Fires Brigade in April 2009. The OPVAL began with the 18th Fires Brigade Army Battle Command Systems and portal coming online at the Fort Bragg NSC. The brigade then deployed to the local training area and connected via satellite to another NSC located at Landstuhl, Germany.

While moving to the training location, their ABCS and portal data were migrated to Landstuhl and were available to the brigade upon installing the satellite link to Germany. This effectively simulated a brigade deploying to Southwest Asia and having access to all of their home station data immediately upon arrival in theater.

Moving the Army onto a single enterprise network, then integrating Tactical C4I/JNTC assets into NSCs, will ease the burden on both the Signal community and the warfighting commander during garrison, training, deployment, and combat operations. 7th SC (T)'s ability to standardize the operations of all CONUS NECs has the potential to provide access to the Army network anywhere in CONUS, free of firewall settings and other encumbrances that frequently prevent efficient collaboration via portals, Adobe Connect, and other applications between units at different installations.

Soldiers could also retain the same e-mail address when changing duty stations, rather than applying for a new account with each permanent change of station. The benefits of a single Army network are far reaching and will ultimately enhance our level of support to the warfighter.

With the consolidation of services at the NSCs providing a true enterprise solution, it might appear

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that efficiencies could be achieved by reducing the number of system administrators across the Army. However, this line of thinking is flawed for several reasons.

Because a government civilian commonly is employed in the same position for an indefinite period as long as there are no performance issues, establishing civil service positions or contracting civilians is the best way to operate and maintain NSCs in the long term. Tactical communications Soldiers have a high turnover rate due to PCS or expiration of term of service. Also, unless the Army can establish additional billets, manning NSCs with Soldiers would require harvesting signal billets from elsewhere in the force. This would leave divisions, brigades, and NETCOM expeditionary signal units without the appropriate manning for their missions. Therefore, civilians provide the best source for NSC manpower.

However, this is not to imply that Signal Soldiers should not perform system administrator duties. Commanders at all levels expect their G6/S6 to quickly fix all networking issues. Appropriately trained and certified Signal Soldiers need to have full system administrator rights over their organizational units in order to provide the flexibility and responsiveness commanders expect of the Signal community. It is not necessary for Soldiers to be geographically located at an NSC as this could be achieved by allowing remote access to servers located at the NSCs. This model not only provides more responsive service to warfighters, but also achieves efficiencies by allowing networking issues to be actioned at lower levels, thereby alleviating some of the NSC workload.

The Army invests heavily in training the Signal technical military occupational specialties. Functional Area FA24 (telecommunications engineer), FA 53 (information systems management), Warrant Officer series 250N (network), 251A (automation), 254A (TAC C4), and the enlisted MOS 25B (information systems operator

analyst) unquestionably have the aptitude to serve as system administrators. In fact, they are already routinely performing these functions on dozens of Forward Operating Bases throughout Afghanistan and Iraq.

Leveraging their abilities in the NSC construct would add yet another benefit of providing a training opportunity for the development and sustainment of skills that are required during combat operations. Regardless of whether they are a Soldier on the battlefield or a civilian in an NSC, the system administrator training must be standardized. This is achieved among the civilian workforce by requiring various technical certifications (such as in Microsoft or Cisco) as a requirement for the position. The same standard can be achieved for Signal Soldiers by making these certification exams a requirement for graduating from courses at the U.S. Army Signal Center, Fort Gordon, Georgia.

Streamlining Approvals Synchronizing Networks

The 7th SC (T) is streamlining the approval process, so that PMs and local units will not have to seek individual approval through their local NECs. As the Designated Approval Authority (DAA) for the strategic network, the 7th SC (T) Commander will provide blanket approval to NECs to connect ABCS systems to their garrison's network.

Quicker set up will be achieved with NEC approvals for connection to ABCS 6.4 equipment already in place. The 7th SC (T) will increase network reliability by monitoring the information assurance readiness for each system. By standardizing installation NECs across CONUS, 7th SC (T) will provide an environment in which ABCS can communicate and share information at separate installations.

A standardized change management process for PM managed systems will be an efficient alternative to the current NEC process, which might differ at each installation. Vetting PM managed systems through the 7th SC (T)

change management process will standardize implementation across CONUS. The number of duplicate documents will diminish, as many present forms are virtually the same aside from Internet Protocol addresses. Synchronizing disparate networks will also be achieved to eliminate the need for additional network infrastructure, ending the excess costs and logistical burdens that come with it.

In an effort to standardize the connection of ABCS in the garrison environment, 7th SC (T) and the 106th Signal Brigade have worked with the ABCS PMs to validate Information Assurance documentation. It will also ensure the mitigation of each potential risk.

During the Army South ABCS fielding, numerous approvals to operate and certificates of networkiness were identified as non-existent or expired. As information assurance documentation was approved and updated, ABCS systems were added to the network and then scanned for DISA Gold disk current standards, multiple CAT I-IV deficiencies were identified that were not addressed in the Plan of Action and Milestones. This highlights the need for 7th SC (T) to work with the PMs to ensure Information Assurance compliance is achieved.

Fewer Acquisitions Barriers Mean Quicker Fieldings

So what can be done to expedite much needed capabilities to the warfighter? How can units obtain the mission-critical connectivity tools they need? We recently posed this question to the acquisitions community and learned that a more streamlined approach is necessary for this to take place.

Formalized methods do exist to grant rapid approvals for field urgent capabilities to units deployed for Operation Iraqi Freedom/Operation Enduring Freedom, but the Army needs to continue investigating methods of increasing flexibility in the acquisitions process. Representatives from the acquisitions community told us that over the past year flexibility has diminished with greater Depart-

ment of Defense oversight. While checks and balances are critical, too many can be detrimental to supporting the fast pace of the battlefield and negatively impact the objective of meeting the warfighter's mission-critical needs.

The current acquisitions process allows units to field their own quick reaction solutions to technical needs on the battlefield, but only for small scale projects. They will be challenged, however, to obtain approval for bigger efforts with large hardware requirements.

Conclusion

In order to prepare for and conduct full spectrum operations, SIPRNet is required down to platoon level in garrison, field, and combat environments. The proven success of installing DF/GF to the battalion level throughout the 82nd Airborne Division garrison areas, utilizing the installation infrastructure, has already enabled commanders

to exercise in a garrison environment the digital battle rhythms essential during training or combat deployments.

This allows them to focus immediately on their mission when arriving in theater rather than wasting the first few weeks developing digital tactics, techniques and procedures and improving Soldier proficiency with ABCS gear. 4/82nd BCT has submitted an operational needs statement that will allow for the extension of SIPRNet to platoon level using JNTC, PRC-117G, and RF-7800 equipment in tactical situations (training and combat).

An additional ONS has been submitted by the 18th Airborne Corps for a secure en route communications system that will provide real time connectivity while in flight by using a combination of Ku-Satellite spread spectrum (KuSS) and PRC-117Gs. The KuSS capability will add full motion video and Voice Over Secure Internet Protocol (VoSIP) to the list of capabilities supported

by the current SECOMP-I equipment. Lastly, NETCOM must ensure that the NSC CONOPS enables our well trained and highly capable Signal Soldiers to contribute by allowing for system administrative privileges under the NSC construct. These initiatives can and will result in quick, reliable, and secure C4I to the warfighter.

MAJ Paul Sparks and MAJ Graham Fox composed this article while deployed with the 82 ABN DIV in Afghanistan. MAJ Sparks is currently assigned to J6, US Forces Japan. His previous operational experience includes 3/82 BCT (Afghanistan), 82 ABN DIV (Iraq/Hurricane Katrina), 2/75 RGR BN (Afghanistan), and 112th SIG BN (Iraq/Afghanistan). MAJ Fox is currently assigned to 2/82 BCT, with previous operational experience including NATO's Allied Rapid Reaction Corps (Afghanistan), 160th SIG BDE (Kuwait), and 11th SIG BDE (Kuwait).



ACRONYM QuickScan

ABCS - Army Battle Command Systems
ARFORGEN - Army Force Generation
ASA(ALT) - Assistant Secretary of the Army for Acquisitions, Logistics and Technology
ASIP - Advanced SINCGARS Improvement Program
ATO - Approval to Operate
BCAT - Battle Command Assistance Teams
BFT - Blue Force Tracker
CIO - Chief Information Officer
CoIST - Company Intelligence Support Team
CON - Certificate of Networthiness
CONUS - Continental United States
CPN - Command Post Node
DA - Department of the Army
DAA - Designated Approval Authority
DF/GF - Deploying Force / Generating Force
DOIM - Directorate of Information Management
ETS - Expiration of Term of Service
EXEVAL - External Evaluation
FCS - Future Combat Systems
FORSCOM - United States Armed Forces Command
GIG - Global Information Grid
GRF - Global Response Force
JFEXs - Joint Forcible Entry Exercises
JOC - Joint Operations Center

JTF - Joint Task Force
JNTC - Joint Network Transport Capability
JRTC - Joint Readiness Training Center
JTRS - Joint Tactical Radio System
KuSS - Ku-Satellite Spread Spectrum
MOA - Memorandum of Agreement
NETCOM - Network Enterprise Technology Command
NSC - Network Service Centers
OMA - Operations and Maintenance, Army
ONS - Operational Needs Statement
OPVAL - Operational Validation
ORP - Objective Rally Point
OU - Organizational Units
PCS - Permanent Change of Station
PM - Program or Project Manager
RTO - Radio Telephone Operators
SECOMP-I - Secure En-route Communications Package-Improved
SIPRNet - Secure Internet Protocol Router Network
TIGR - Tactical Ground Reporting System
TOC - Tactical Operation Center
TTPs - Tactics, Techniques and Procedures
UAV - Unmanned Aerial Vehicle
VOSIP - Voice Over Secure Internet Protocol
WIN-T - Warfighter Information Network-Tactical

The Regiment's Digital Training Resource

LandWarNet eUniversity

The Signal Center of Excellence G-3/5/7 strives to provide a variety of distributed learning training products and resources for Signal AC/RC units.

Training materials and resources provided are available through the G5 SIMS, dL and Gaming Office.

The Fort Gordon Lifelong Learning Center, a component of the G5, provides the platform for the AC/RC to access dL training resources via the LandWarNet eU web portal.

The G5 Office as a whole (Digital Resources Branch, Distributed Education Branch and Gaming Integration Branch) works to obtain and maintain state-of-the-art training materials and resources to support both the AC and RC training mission.

The dL training materials and resources avail-

LandWarNet eUniversity is the Signal Regiment's online training capability that supports training for Soldiers and units anytime, anywhere.

able via the LWN eU are routinely reviewed/evaluated to ensure that they are relevant to today's training environment, easily and quickly accessible, fill critical training gaps and can be distributed to individual Soldiers or training organizations to meet just-in-time training needs.

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- Joint Counter - JED Center
- NCOS
- Fort Gordon

Publications

Army Communicator
Army Communicator (AC) is the U.S. Army Signal Regiment's professional magazine. The magazine explores trends in the Regiment and provides a place for Signal Regiment members to share their ideas and lessons learned.

Welcome Mr Solomon!

- » Training for Individual Soldiers
- » Training for Units
- » Training for ARMY NECs
- » Downloads (Simulations/CBTs)
- » Technical Forums

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THE RESERVE COMPONENT
RECLASS, PRE & POST-DEPLOYMENT
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I Still Need Training - If you cannot find the training you need by using the links above, contact the LWN eU Support Desk: (706) 791-2447, DSN: 780-2447, atl@ccsna.army.mil

WIN-T Gateway Training Tutorial Video
Posted by: clark.solomon on Friday, September 24, 2010 - 02:11 PM

The WIN-T Gateway provides the Army community with a collection of training material and reference resources for WIN-T systems to include the Joint Network Node, Satellite Terminal Trailer, Battalion Command Post Node, and TAC Hub. AIT course content covers MOS 25B, 25F, 25H, 25Q, and 25S. Training content for BNOCOC, ANOCOC, Warrant Officer and Officer courses is also posted on the Gateway.

To visit the WIN-T Gateway, you must be enrolled in the LandWarNet e-U Signal Sustainment Training, or a Unit University.

[Click here to view the WIN-T Gateway Training Tutorial video.](#)

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Reserve Component Pay for Distance Learning Course Completion
Posted by: James.L.perrin on Wednesday, June 16, 2010 - 10:38 AM

A new directive from the Department of Defense (DoD) now authorizes monetary compensation to members of the Selected Reserve, including members of the National Guard, for successful completion of electronic-based distance learning courses.

All electronic-based distributed learning courses approved for payment or for completion by Soldiers for Reserve retirement points will be listed in the Army Training Requirements and Resources System.

This policy is effective immediately. These changes will be incorporated into the appropriate governing regulations and policies by the Department of the Army, the Army National Guard, and the Army Reserve as soon as practicable.

[Click here to get a copy of the memorandum](#)

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CG Sends

CG Sends
BG Alan R. Lynn
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LWN EU SUSTAINMENT TRAINING (LWN-EXT CAMPUS) > ANNOUNCEMENTS

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October 27, 2010 - November 03, 2010

Welcome to LandWarNet eUniver
Welcome to the LandWarNet eUniver
and wherever it is needed. You will a

Clark Solomon, Extension Campus Coordin
COMM (706) 791-2571 / DSN 780-2571
email: clark.solo@lwn.army.mil

Posted by: Clark Solomon

Training Categories

IA Training	JNN	Simulations/CBTs
COMSEC	Swt / Multiplex	Logistics Info Sys
IT/Networking	Basic Electronics	BVTC
MeLL	Fiber/Cable/Wire	Spectrum Manager
WIN-T Gateway	Battle Command	Data Tools
Tactical Radios	SKL Training	ISYSCON v4
Satellite Systems	Simulations/CBTs	IED Defeat
Multichannel Sys.	Logistics Info Sys	External Links

Training for individual Soldiers with a variety of Signal and non-Signal categories hosted in Blackboard.

LandWarNet eUniversity

LWN eU is the Signal Regiment's online training capability that supports training for Soldiers and units anytime, anywhere. As a premier training resource available through the NIPRNet, LWN eU is ideal for Soldiers seeking Military Occupational Specialty sustainment, pre-deployment, mission support and new equipment training. LWN eU functions as a professional development tool for all Soldiers including joint, interagency, and multinational students. LWN eU consists of two main components: The LandWarNet eU Web Portal and the LandWarNet eU Blackboard LCMS.

More about the LWN eU Web Portal

- The LWN eU Web Portal is the gateway for all LWN eU training including Signal, non-Signal, joint and commercial training.
- The site provides information and links to

what's new in online Signal training.

- Users may access high-end simulations, CBTs and IMI training including the WIN-T INC2 simulation, Nodal Network Simulation, and dozens more.
- The site also provides access to active technical forums where Soldiers may participate in collaborative discussions with peers and subject matter experts.

Soldiers can access the LWN eU Web Portal by going to <https://lwn.army.mil> and logging on with their AKO username/password, or Common Access Card.

More about the LWN eU Blackboard Learning Content Management System

- The LWN eU Blackboard LCMS hosts Signal courseware and a variety of Army training assets.
- Blackboard is a highly popular LCMS being used by thousands of colleges, universities and

(Continued on page 40)

(Continued from page 39)

institutions around the world.

- The LWN eU Blackboard LCMS hosts 90% of all LWN eU training including: MOS producing courseware, individual sustainment training, unit specific training, and commercial and government IT training.
- Guard/Reserve Soldiers can re-class to the 25B or 25U MOS

through Blackboard. (NOTE: Reclassification to additional MOSs will be available soon. Soldiers seeking to reclass must work through their unit's chain of command to access an MOS-T course.)

Soldiers can access sustainment training by logging into the LWN eU Web Portal <https://lwn.army.mil> with their AKO username/password, or CAC

(Common Access Card), and clicking the "Training for Individual Soldiers" button. On the following screen, click "Enroll Me into LWN eU Sustainment Training."

The LWN eU "Training for Individual Soldiers" area is available for any Soldier or DA Civilian to use. This training area links Soldiers to Signal MOS training, equipment training,

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10TH MOUNTAIN DIVISION, FORT DRUM, NY (LWN-EC-10THMDENY) • ANNOUNCEMENTS

10TH MOUNTAIN DIVISION
Fort Drum New York

The 10th Mountain Division is a specially tailored infantry division that is rapidly deployable by strategic airlift to conduct a full spectrum of operations from humanitarian relief to combat.

Signal Sustainment Training

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October 27, 2010 - November 03, 2010

10th Mountain Division Unit University
The 10th Mtn Division Unit University is designed to offer Signal specific training to all Soldiers attached to 10th Mtn Division whenever and wherever it is needed.

This training can be tailored to meet specific unit requirements by contacting one of the following POCs:

Lifelong Learning Center Staff

Clark Solomon, Extension Campus Coordinator COMMI (706) 791-2571 / DSN 760-2571 email: clark.solomon@us.army.mil	Mike Sizemore, Chief COMMI (706) 791-2448 / DSN 760-2448 email: myron.m.sizemore@us.army.mil	Support Desk, Lifelong Learning Center COMMI (706) 791-2447 / DSN 760-2447 email: u6-3c@conus.army.mil
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Accessibility information can be found at <http://access.blackboard.com>

A unit university with training material organized by assemblage and subject.

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35TH SIGNAL BRIGADE LIGHTNING WARRIORS UNIVERSITY MAIN SITE (LWUeU-MOSORCEMAIN) > ANNOUNCEMENTS

35TH SIGNAL BRIGADE
Lightning Warriors University, Fort Gordon, GA
 The mission of the 35th Signal Brigade is to provide rapidly deployable, force-projection signal support for the Army, joint and combined operations during war and in operations other than war.
Signal Sustainment Training

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October 27, 2010 - November 03, 2010

Thu, Jul 10, 2008 – Welcome to Lightning Warriors University

Welcome to the 35th Signal Brigade Lightning Warriors University

Lightning Warriors University was designed to instruct and sustain training for soldiers on equipment within the brigade and to help them become more proficient in executing their mission. Since all units are equipped differently there is a need for people to either be introduced or re-certified in equipment they are asked to install, operate and maintain. Lightning Warriors University will help students using a track system by MOS to attend training online as well as a classroom environment. Students will be able to see exactly where they are on completing their certification. The goal of Lightning Warriors University is to produce well trained soldiers and therefore enhancing the soldier and the unit mission readiness.

For questions, or for information about gaining access to this course please contact:

SFC David Yeiter
 Lightning Warriors University NCOIC
 Phone: (760) 791-6317, DSN (780)
 Email: david.yeiter@us.army.mil

If you need help with Blackboard, or have trouble with course content, contact:

Support Desk
 Lifelong Learning Center
 Fort Gordon, GA 30905
 Phone: (706) 791-2447
 Email: ut-llc@conus.army.mil

Need an introduction on how to use Blackboard? [Click here to access Blackboard 101](#). Click the "Submit" button to enroll.

A unit university with training material organized by MOS.

commercial and government IT training, and new equipment training for Signal mission support. Training materials are categorized by equipment assemblage and subject, and is updated every week.

More about LWN eU Unit Universities

A unit university is a customizable Blackboard training site used to provide commanders, training staffs and Soldiers with access to the most up-to-date training for their unit missions. Unit universities provide direct access to TRADOC approved MOS training, computer-based training, simulations, interactive multimedia instruction, and links to Joint training resources.

- Unit Universities contain Signal MOS sustainment, information technology, communications equipment and Battle Command System training.
- Your unit training staff has full control of the unit university, and can upload training created by their unit.
- Built into every unit university are tools for leaders to manage and monitor the progress of their unit's training.

- Soldiers can access their unit university through the LWN eU Web Portal by clicking the "Training for Units" button. It takes approximately two days to build a unit university and fully populate it with training for your unit.

If your unit does not have a unit university, please call the LWN eU staff.


Virtual/PC-Based Simulators and Simulations

Interactive multimedia instruction greatly enhances and standardizes instruction for Active Component and Reserve Component units throughout the Force when self-development, sustainment, refresher and remedial training are conducted.

The following Virtual/PC-based simulators are available via the LWN-eU (<https://lwn.army.mil>) web portal to facilitate communications equipment operations training:

(Continued on page 42)

Fielded SIMS

1. WIN-T INC 2 Fielded: JUN 09 Target Audience: 25N10	Fielded: DEC 07 Target Audience: 25N10, 25B10	Target Audience: 25Q10
2. SSS (v3) Transit Cases Fielded: MAR 09 Target Audience: 25N10, 25F10	12. CPN Upgrades Lot 9 (Spiral 8) Fielded: DEC 07 Target Audience: 25B10	22. DTOC Fielded: OCT 05 Target Audience: 25B10
3. WIN-T INC 1 Fielded: DEC 08 Target Audience: 25N10, 25F10	13. JNN-N v3 Baseband Upgrades Lot 9 (Spiral 8) Fielded: DEC 07 Target Audience: 25N10	23. TIMS (ISYSCON) Fielded: OCT 05 Target Audience: 25B10
4. SSS (v3) Fielded: JUN 08 Target Audience: 25N10, 25F10	14. AN/TSC- 85/93 Fielded: MAY 07 Target Audience: 25S10	24. HCLOS Fielded: OCT 05 Target Audience: 25Q10
5. Phoenix Upgrades (Alpha Version) Fielded: JAN 08 Target Audience: 25S10	15. Phoenix (Version A) Fielded: APR 07 Target Audience: 25S10	25. GSC-52 Fielded: JAN 04 Target Audience: 25S10
6. Phoenix Upgrades (Bravo Version) Fielded: JAN 08 Target Audience: 25S10	16. LAN/WAN Fielded: APR 07 Target Audience: 25B30 TATS-C, C, F, L, P, Q, S, U, W, 250N, 251A, 53A, 25A LT/CPT	26. BSN Fielded: OCT 04 Target Audience: 25F10, Q10, P10
7. JNN Upgrades v2 (Spiral 5-7) Fielded: DEC 07 Target Audience: 25N10	17. SATCOM Hub Upgrades (S 5-7) Fielded: MAR 07 Target Audience: 25S10	27. FBCB2 Fielded: OCT 03 Target Audience: 25U
8. STT Upgrades JNN-N v2 (Spiral 5-7) Fielded: DEC 07 Target Audience: 25Q10, 25S10	18. JNTC-S- INC 2 Fielded: FEB 06 Target Audience: 25N10, 25B10	28. TRC-173 Fielded: NOV 01 Target Audience: 25P10, Q10
9. CPN Upgrades JNN-N v2 (Spiral 5-7) Fielded: DEC 07 Target Audience: 25B10	19. JNN (S 1) Fielded: OCT 05 Target Audience: 25N10	29. S6 Staff Simulation Fielded: : AUG 09 Target Audience: 25A, FA53, 254A, 250N, 25U50
10. Baseband Upgrades (Spiral 5-7) Fielded: DEC 07 Target Audience: 25N10	20. JNN-1 (Spiral 5-7) Fielded: OCT 05 Target Audience: 25B10	30. Nodal Network Simulation Fielded: APR 10 Target Audience: 25B, 25N, 25Q, 25S
11. JNN-N v3 Upgrade Lot 9 (Spiral 8)	21. JNN-1 (Spiral 5-7) Fielded: OCT 05	For more information on the status of virtual/PC-based simulator training products, contact Patrick Baker, Chief, Digital Training Division, DOT at DSN 780-0221 or commercial at (706) 791-0221. 

ACRONYM QuickScan

AC - Active Component
BSN - Brigade Subscriber Node
CBT - Computer Based Training
CPN - Command Post Node
DTOC - Division Tactical Operations Center
FBCB2- Force XXI Battle Command, Brigade-and-Below
GSC - Ground Station Control
HCLOS - High Capacity Line of Site
JNN - Joint Network Node
JNN-N - Joint Network Node-Network
JNTC-S - Joint Network Transport Capability Spiral
LAN/WAN - Local Area Network/Wide Area Network
LCMS - Learning Content Management System

LLC - Lifelong Learning Center
LWN eU - LandWarNet eUniversity
MOS - Military Occupational Specialty
NIPRNET - Nonsecure Internet Protocol Router Network
RC - Reserve Component
SATCOM Hub - Satellite Communications Hub
SIM - Simulator/Simulation
SSS - Single Shelter Switch
STT - Satellite Transportable Terminal
TIMS (ISYSCON) - Tactical Internet Management System
TRC - Tactical Radio Communications
VOIP - Voice Over Internet Protocol
WIN-T - Warfighter Information Network- Tactical

Afghanistan communications success

By CPT Randall A. Linnemann

Successful operations on the battle fields of Afghanistan are challenging Signal Soldiers to implement and maintain robust digital capabilities.

With the migration of brigade combat teams to network centric and server based systems to facilitate collaboration and planning, the requirement is being levied against battalions, and even companies, to develop and then maintain communications systems

across a dynamic spectrum. These requirements are not limited to the capability of digital collaboration, but also to the quality of service. While a battalion level maneuver forces commander can still control his fight using a map and a handset, his staff at the battalion main requires digital connectivity, and a capable rate of data transfer, to the brigade's various servers. CPOF and other ABCS systems, Microsoft SharePoint Portals, and Microsoft Exchange are all excellent technologies that allow the bri-

gade optimum efficiency through automating processes and systems. However, the expansion of services provided on the BCT LAN, and its increased efficiency, does not trickle down evenly to battalion or company nodes.

Although it is not aligned with doctrine, the trend is for strategic assets to support brigades, for JNNs to support battalions, and for CPNs to support companies; with variously named TDMA terminals (VSNAF, traffic terminal, SPOP, VSAT and STOW) to support company minus outposts. However, with the shift in troop strength from Iraq to Afghanistan, the expansion of the strategic network is not keeping pace with the expansion of the tactical network. Thus JNNs are supporting brigades, and CPNs are supporting battalions, with TDMA terminals supporting company and below command and control nodes.

Subsequently, the TDMA mesh is getting saturated as the increasing number of subscribers outpaces the number of terminals and the capability of the TDMA mesh. This leaves the company on the ground at a remote outpost without the ability to effectively collaborate using digital resources.

Task Force Spartan (3rd Brigade, 10th Mountain Division) was able to mitigate the latency of satellite links and the saturation of the TDMA mesh by using line of sight assets and controlling the plan of how command and control will allow freedom of maneuver and not just what network assets will be provided.

The battalion S6 is usually either the target of frequent negative discourse, or the right hand man of the battalion commander and executive officer. For an S6, the difference between being brutalized on the staff and being a respected peer is the difference of the two tactical purposes of "providing" and "allowing."

Providing communications

(Continued on page 44)



Photo by 1SG Christopher Peters

Signal Soldiers in Logar Province, Afghanistan place a load of equipment at a site designed to facilitate digital relay communications between the company command post and brigade headquarters.

(Continued from page 43)

networks and platforms is only half the fight. The communicator cannot limit himself to providing only the computers and communications systems. Instead, communicators plan and tell maneuver forces commanders and staffs how to employ communications platforms in a way that allows commanders to command and control subordinate headquarters. This allows the commanders the freedom to maneuver subordinate commands.

Constraints

The current mission requires the geographic dispersion of commands at all levels in order to integrate with the local populace. As such, the commanders on the ground are expecting the digital network to replace the combat radio network as the primary means of collaboration and reporting. However, the military tables of organization and equipment still only allocate one 25U at the company command level; and only

two 25B at the battalion command level. These specialty MOSs are combat multipliers, and are needed with increased density at these levels.

The major constraint includes a collection of issues that coalesce into the statement that the Army's move towards server based collaboration is limited at the company level. There is not enough bandwidth on available TDMA channels to make TDMA terminals a viable option. There is limited infrastructure to support absorbing various company satellite transmission nodes into a fiber backbone. It is not a feasible option to make dispersing servers to the near sides of links for management at the battalion and company levels (mitigating latency) because the knowledge base is non-existent or inadequate.

Solutions for Manning and the Knowledge Base

There are a variety of solutions and adaptations available to mitigate these various constraints. The foremost solution is to provide

relevant cross training of 25Us and 25Bs.

The advent of the forward support company directly attached to the maneuver battalion alleviates the necessity of running a detailed maintenance program out of the battalion S6. (Instead, the 25U20 assigned/attached to the individual, maneuver company runs a company maintenance program, coordinating directly with the FSC's BMT, with oversight from the battalion S6.) This allows the dispersion and employment of 25 series Soldiers in key locations at key digital and tactical, command and control nodes.

This is an interim fix available now, while the necessary long term fix is deliberated and eventually employed.

The long term fix would be the increased density of Soldiers with the 25B MOS at battalion and company levels. As communications systems get more complex, the ability is decreasing for an 11B or 13F to intuitively troubleshoot a computer problem. Every company should have a 25B10 as its assigned IMO, and a 25U20 as its assigned communications chief.

Every time the company commander leaves his TOC, he assumes risk in communications. If he takes his one 25U20 with him, the TOC has no subject matter expert, or even remotely knowledgeable Soldier, to manage the rest of the company's communications needs, or coordinate with the battalion S6. But, if the company commander does not choose to take his communications subject matter expert with him on (multi-day) missions to allow command and control, he assumes risk that he, the commander, will not be able to command or control his subordinate elements because of a lack of the ability to communicate.

Aligned with this is the consolidation of 25 series for low density training. While low density training occurs at a battalion level, and sometimes at a BCT level, the knowledge base is limited to the participants. When signal battalions dissolved, so did the communications community at a division level. The oversight of the signal battalion commander and



Photo by 1SG Christopher Peters

SPC Phillip Camera (*standing*) and SSG Daniel Jones set up antennae in Logar Province, Afghanistan.

command sergeant major, dual hatted as the G6 and G6 NCOIC is gone. Consequently, training has devolved without that senior subject matter expert oversight and support. Similarly, the Signal Battalion S3, usually run by a major with the NETOPS as a section, has now been turned over to a company commander with the NETOPS as a platoon. And while the support is out there, it is not systemic. As a battalion S6, I and my Soldiers frequently participated in both my BCT's, as well as the sustainment brigade's, network support company training. But this was not a systemic answer as it was done because of individual and habitual relationships. And it did not address if the BCT NSC was well trained, as there is little to no Signal leader oversight beyond that company commander.

Solutions for the Network

To solve the latency and bandwidth problems associated with TDMA terminals MAJ Tim Hardy, 3rd Brigade Spartans 10th Mountain Division S6, has implemented line of sight systems and solutions in Afghanistan despite this technology is typically dismissed due to assumptions of restrictive terrain. MAJ Hardy, with the assistance of CPT George Seiler and CW2 Ed Sturdivant assessed and employed high ca-

capacity line of sight links using the AN/TRC-197 as a transmission system for the JNN. These have since been replaced by the Redline AN-80i, providing data links in the range from 30 Mbs to 100 Mbs. The network support company, with the encouragement of LTC Tom Gukeisen, 3-71 CAV commander, built command and control nodes out of 20' MILVANs. The inside was insulated and sided with plywood and an environmental control unit was mounted to the front. The MILVAN then housed an array of communications equipment as desired by the user; from AN/VRC-92s to accommodate company and battalion retransmission, to Blue Force Trackers, to AN-80s. Furthermore, in employment, we were able to set the AN-80s into a relay; allowing the MILVAN to be placed on high ground and act as a hub to various company command posts in the low ground; blasting the aggregate of the company traffic from the high ground on an AN80 link back to the brigade headquarters. These direct links provide voice and server traffic to flow in excess of 30 Mbs, with a latency of less than 100ms round trip, allowing the dispersion of command nodes without the sacrifice of communication.

Solutions for Combat Network Radio

SSG Kyle Smith from 1-32 IN suggested mounting vehicle whip antennae to RAID towers, providing an additional 15 meters in elevation above what a QEAM could provide (the RAID tower is a 30M tower). This allowed FM to re-emerge as the predominate network used to command maneuvering platoons and companies in the Kunar River Valley for over 50 miles. This is necessary due to the limited availability of TACSAT as well as spectrum management issues.

Conclusion

There are many constraints arrayed against the success of the S6 and NSC commander in Afghanistan. However, a serious mission analysis that considers all options in personnel and equipment can mitigate the majority of the problems. In the end, as long as a commander can pick up the handset for a phone or a radio and talk, the S6 is successful.

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ACRONYM QuickScan

ABCS - Army Battlefield Command Systems
BCT - Brigade Combat Team
BMT - Battalion Maintenance Technician
C4I - Computer, Communications, Command, Control, and Information
CPN - Command Post Node
CPOF - Command Post of the Future
FM - Frequency Modulated Radio
FSC - Forward Support Company
IMO - Information Management Officer
JNN - Joint Networks Node
JNTCS - Joint Networks Transport Capable Spiral
LAN - Local Area Network
LOS - Line of Sight

MTOE - Military Table of Organization and Equipment
NETOPS - Network Operations
NSC - Network Support Company
QEAM - Quick Erecting Antenna Mast
OEF - Operation Enduring Freedom
SNAP - SIPR NIPR Access Point
SPOP - SIPR Point of Presence
STOW - SIPR Tunneled Over WAN
TDMA - Time Division Multiple Access
TOC - Tactical Operations Center
WAN - Wide Area Network
VSAT - Very Small Aperture Terminal

Signal Corps in the Korean War

By Steven J. Rauch

During the opening months of the Korean War, the U.S. Army had to quickly adjust from its peacetime duties in occupied Japan to immediate combat operations.

Signal Corps officers and Soldiers soon found themselves in the thick of combat operations, having to improvise and make do with WWII legacy communications equipment. One such unit was the 24th Signal Company, 24th Infantry Division, the first U.S. combat unit into Korea to help the Republic of Korea Army halt the communist advance to the port of Pusan. Throughout July and August 1950, the 24th ID conducted a delaying action to slow the North Korean People's Army long enough to enable the U.S. 8th Army to marshal forces into the Pusan Perimeter defense line.

The account which follows is from an interview with MAJ Richard D. Speer, 24th Signal Company commander, conducted on 20 July 1955 by historians of the Signal Corps Historical Division. This interview is part of an unpublished manuscript held by the Signal History Office at Fort Gordon, Ga. The interview that follows has been edited for clarification.

MAJ Speer was in the 58th Signal Battalion serving the I Corps when the Corps was deactivated in March 1950 in Japan during a general reduction in force program. Personnel of the 58th Signal Battalion were reassigned to the 24th Signal Company, 24th Division. MAJ Speer became the commanding officer of that company.

During the ensuing months, the 24th Signal Company, stationed at Kokura in northern Kyushu, Japan, fortunately engaged frequently in field exercises. MG [William F.] Dean insisted upon such exercises in order to familiarize troops with field living and field problems.

These exercises lasting variously a week-end or an entire week proved most valuable, in MAJ Speer's opin-

ion. When the call came to go into Korean combat late in June 1950, MAJ Speer considered the 24th Division as well prepared an Army unit as any.

Immediately upon the communist attack in Korea the 24th Division prepared to enter the fight. First a small detachment of the 280 officers and men of the 24th Signal Company went to Korea to assist the 21st Regiment in the area of Suwon, just south of Seoul, arriving there on 3 July. The rest of the company arrived in Pusan on the 4th and proceeded North by rail to Taejon. They had sailed from Japan in an LST, manned by the Japanese merchant marine. . . . The company's equipment was generally good except for wire, which was old and much used in training exercises.

The company was at about full strength and included a wire platoon, a radio platoon, a radio relay platoon (of 52 men and six terminals of AN/TRC-3 and 4), a message center and messenger platoon, and a supply and maintenance section serving the whole 24th Division. Wire was extremely valuable in the Korean fighting [and again proved itself the principal means of communication]. But the constant regrouping of the troops during the retrograde actions, plus the heavy vehicular traffic along the few roadways severely damaged the wire and caused much outage. Even so, the service of the wire lines was outstanding and the wire crews performed remarkably well.

The company's radio relay proved its value also. The com-



U.S. Army Signal Corps photo 345506

Two Soldiers splice a communications line to a forward observation post, 4 August 1950, as U.S. forces prepare to establish a defensive line along the Naktong River.

pany's radio relay terminals, unlike the relatively fixed terminals serving corps headquarters, had to move every few days. But mounted in trucks in the hands of skilled crews, radio relay dispelled any initial uncertainty about its reliability and mobility. The only trouble with the AN/TR-3 and 4 was that they had to be realigned after each move.

A very important wire aid was the Mukden cable which ran along the main axis through Korea. The 24th Company wire men used individual pairs of its 48 circuits, not as carrier although the wire was quadded and could be so used, but as physical pairs for communications foreward or rearward. . . . The company also made some use of radio in the early days of the fighting, and operated a grueling schedule of messenger service employing jeeps.

In position at Taejon since 5 July serving defenses north and north-west, the 24th Signal Company through the next 10 days constantly contributed transportation, clothing and food to the remnants of our regiments that had been overrun. The company lost men in a forward radio team and a messenger, and a construction officer on the Kum River who had been laying wire to a regiment out-post. He was cut off, took refuge with the regiment which was then overrun by the enemy.

While departing from Taejon, the 1st Cavalry Division passed through the Company. The 24th Signal Company regrouped after the Division passed through, and the Division went into the line 75 miles west of Miryang. But the position was untenable. . . [and] the Company had to leave, pulling back to the Nakdong River.

Established west of the Nakdong in the last week of July and 1st week of August, the Division headquarters suffered from enemy artillery fire. The headquarters withdrew behind a range of hills six miles or so east of the Nakdong. Only one road led westward to the regiments and artillery. It was peppered with fire and travelled constantly by trucks. Speer lost another construction lieutenant on this road. Wire was the mainstay. Radio was useful when it could be used. But the Korean hills often blocked the VHF radio transmissions. HF could be used, SCR-193, but took skilled operators. And anyway casualties were so high, radio-men and cipher operators (M-209) became too few. One infantry unit had only six communicators left from its platoon of 86 men. Maintaining wire became a matter of life or death in more ways than one. While troubleshooting wire lines near Miryang, Signal wiremen were caught and pinned down many times by fire.

It was during this period that long laterals were laid south to the 25th Division and 1st Marine Division. No lateral communication was maintained to the north because the nearest unit was the 27th Regiment operating 50 miles away as an independent unit.

MAJ Speer's interview appears to end there. The road he referred to was a narrow, winding road between the 24th ID HQ and the forward infantry regiments which was cut by NKPA units on 12 August 1950. Signal Soldiers soon found themselves part of ad-hoc quick reaction force that was sent on com-




U.S. Army Signal Corps photo 346244

The Yongsan-Kyun-gyo road which served as the main supply and communications route between the 24th Infantry Division Headquarters and forward combat units. MAJ Richard D. Speer, 24th Signal Company commander, refers to this road as a challenge for Signal Soldiers who had to help clear it of enemy forces from 12-14 August 1950.

bat patrols to try to keep the road open to resupply forward units, evacuate casualties, and get messages through.

For over 48 hours NKPA soldiers denied access to the road, which included cutting all wire communications lines to the U.S. combat units conducting desperate defensive operations. During that time, division leaders relied on a three-hour process where radio messages had to be encoded, transmitted and deciphered. Instead, the commanders turned to using written messages dropped from light observation planes to the forward units. Eventually the road was cleared and the 24th Signal Company restored wire communications between the division headquarters and frontline units on 14 August. But as MAJ Speer described, this came at a price for several Signal junior officers and Soldiers, who gave their lives to get the message through.

Steven J. Rauch is the U.S. Army Signal Branch historian at the U.S. Army Signal Center of Excellence at Fort Gordon, Ga. 

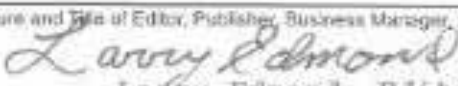


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important goal and to
the doing of great things:
strength and perseverance.*

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privileged few; but austere
perseverance, harsh and
continuous, may be employed
by the smallest of us and
rarely fails of its purpose, for
its silent power grows
irresistibly greater with time."*

- Johann von Goethe

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